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BREAST CANCER STUDY
1997 PATIENT SURVEY

METHODOLOGY
AND
GENERAL SUMMARY OF DATA

RP 00-001

APRIL 2000

UNITED STATES ARMY
MEDICAL DEPARTMENT CENTER AND SCHOOL
FORT SAM HOUSTON, TEXAS 78234-6125

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HEALTHCARE EDUCATION AND STUDIES
(CHES)

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This report presents the methodology and a general summary of results from a 1997 survey of breast cancer patients. The survey included all women diagnosed and/or treated for breast cancer at Brooke Army Medical Center, Fort Sam Houston (San Antonio), Texas, whose breast cancer was initially diagnosed in the period 1987-1997. Basic summary statistics and results of ANOVA and Chi-square tests of survey variables byrace are presented for 907 white, African American, and Hispanic patients.

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TABLE OF CONTENTS

INTRODUCTION

The Studies and Analysis Branch in the Center for Healthcare Education and Studies (CHES), U.S. Army Medical Department Center and School, Fort Sam Houston (San Antonio), Texas has a number of medical/healthcare databases which are useful tools for epidemiological research and healthcare management decision-making. This report is concerned with the data obtained from a mail survey of breast cancer patients conducted in cooperation with Brooke Army Medical Center (BAMC), Fort Sam Houston.

In a previous study conducted in 1996-1997, Branch staff evaluated differences in survival between African American and white women treated in U.S. military health care facilities who had been diagnosed with breast cancer between 1975 and 1994. Their retrospective review of 6,577 breast cancer cases in the DOD Automated Central Tumor Registry (ACTUR) found that although the equal-access health care system improved survival rates of African American women compared to those in the general population, there still existed a significant, unexplained difference in survival between African American and white patients.[1] Because of these findings and due to observations made during the review of the tumor registry data, the decision was made to conduct further investigations.

From the ACTUR data, it was known that more than 900 women with breast cancer had been registered in the BAMC Tumor Registry from 1987-1997 which would provide a subsample of sufficient size for use in further research. Researchers anticipated Hispanic patients would be available in sufficent numbers to incorporate them into the previous comparison of whites and African Americans. In September 1997, Branch researchers applied to BAMC's Department of Clinical Investigation to conduct a study entitled "Enhancing the DOD Automated Central Tumor Registry (ACTUR) Data to Develop More Precise Measures for Survival Analysis and Epidemiological Studies of Breast Cancer Patients." On 30 September 1997, BAMC's Institutional Review Board granted approval of the study. Female breast cancer patients registered in the BAMC Tumor Registry were surveyed. Survey findings were combined with the data from ACTUR and with detailed information that would be extracted from medical records at BAMC.

This report is concerned only with the patient survey. Details of the extraction and summarization of the medical data, as well as findings obtained from merging the survey with medical records and ACTUR data, are reported elsewhere. The purpose of the current report is to document the methodology and to present initial findings by race for whites, African Americans, and Hispanics. This report is intended to provide the basic description, and initial summaries of the data. This report may be used by other researchers to acquaint themselves with the characteristics of variables of interest to their follow-on research.

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[1]Wojcik BE, Spinks MK, Optenberg SA. Breast carcinoma survival analysis for African American and white women in an equal-access health care system. *Cancer* 1998;82:1310-8.

METHOD

Patient Selection

Names and addresses of study patients were obtained from a recently updated Branch copy of the ACTUR 5.0 database. Patients included in this study were females diagnosed and/or treated for breast cancer between 1987 and 1997 at Brooke Army Medical Center. All BAMC breast cancer patients with a date of entry in the ACTUR registry of 1987 or later were included in the list of patients to be surveyed.

Survey Questionnaire

CHES staff developed a survey to be mailed to breast cancer patients. Questions dealt with mammogram history, discovery of the breast cancer, treatments received, other cancers, relatives with breast cancer, children, height and weight, tobacco and alcohol use, diet and exercise, menstrual history and menopause, birth control use, estrogen replacement therapy, geographical region, education, and patient's/spouse's military status and rank. A thousand copies of the survey and cover letter explaining its purpose were printed (Appendix 1).

Surveys were forwarded with self addressed, stamped return envelopes. During January 1998, surveys were mailed to those patients identified in the Registry as still living as of October 1997 (n=671). Certified Tumor Registrars (CTRs) screened the records of deceased patients for survey information. CTRs also screened records for patients who did not return the surveys or returned incomplete surveys. A few surveys were completed during clinic visits by newly-diagnosed or return-visit patients seen by a cooperating physician at BAMC.

A total of 542 surveys mailed to patients were returned, including some duplicate surveys, resulting in an 81% return rate. Completed surveys were sequentially assigned unique identification numbers. The survey id number, ACTUR Accession Number, and patient's birth date and death date were recorded on the first page of the survey.

For patients indicating two cases of breast cancer, the online ACTUR database was queried for additional information, including dates of diagnosis. If both cases were primary cancers, then data pertaining to the case with the earlier date of diagnosis within the study period, 1987-1997, would be coded on the survey (e.g., type of surgery and additional treatments received). Treatments for the other cancer would not be coded, but the "other cancer" category for breast cancer would be selected.

All surveys were reviewed for completeness and accuracy, and coded for digitization, which was performed by a local vendor. The vendor provided a diskette containing a text file of the data plus file layout and coding information (Appendix 2).

CHES staff read in the data file on a PC for quality control. When quality checks were completed, the text file was then transferred to the CHES SUN/UNIX for conversion to a SAS data file. SAS formats and labels were created and stored for the survey variables. Preliminary summary analyses were run to obtain initial information about the survey data.

Computer Records

The survey data were converted into computer files in two batches. The first group (n=517) included all surveys returned by living patients plus surveys returned by relatives of deceased patients, and some surveys completed by CTRs. This first group was digitized in July 1998 (txt file: bcp.dat, SAS data file: bcp.sd01). The second group (n=444) contained CTR-completed surveys for non-respondents and the remaining dead patients plus surveys completed by patients at the BAMC clinic and were digitized in February 1999 (txt: bcp2.dat, SAS: bcp2.sd01).

Next the two data files were combined into a single SAS file and merged with data obtained from the ACTUR database and the Breast Cancer Study's laboratory collection sheets. After the merger, records were deleted for such reasons as duplication (patient filled out mailed survey and another one during a visit to BAMC) and out-of-range diagnosis dates (original diagnosis was prior to 1987). After incomplete records were omitted the records of 943 patients diagnosed and/or treated for breast cancer at BAMC between 1987-1997 remained. After matching race from ACTUR to the medical records, 907 white, African American, and Hispanic patients (96% of the records) were extracted and retained for detailed study and analysis (SAS data set: wbh1.ssd01, 907 observations, 343 variables).

To simplify analysis of the survey data, a subset of the white-African American-Hispanic data set was created which contained only the survey data (98 variables) plus the race variable. Several new variables derived from the survey were added, resulting in a final white-African American-Hispanic (WBH) data set containing 907 observations and 134 variables (SAS data set: wbh3c.ssd01).

Appendix 3 is an alphabetical listing of all variables, their SAS attributes, and the number of the survey question(s) they represent or are related to (if applicable). Appendix 4 contains the SAS formats which define the coded, numeric values of the categorical variables. Appendix 5 contains notes that were made at the time the surveys were coded prior to data input. The notes comment on information from the surveys that was not captured by the coded input. Appendix 6 contains the SAS code used to create the variables derived from the original 98 survey variables. Appendix 6 also includes SAS statements used to correct data problems which were discovered during exploratory analysis of the data set. These corrections were not made to the original merged data set, only to the WBH file.

Statistical Analysis

Basic descriptive statistics were generated for the survey data. Frequency distributions were generated for each of the categorical variables (excluding identification variables such as patient name or survey identification number). Frequency distributions, summary statistics (such as means, variances, minimums, and percentiles), stem and leaf plots, and normal probability plots were produced for each of the continuous variables. Printouts were examined for errors and outliers. The entire record involving a suspected error or extreme outlier was printed and compared to the original survey. Errors were correctly applied to the WBH data set and to the main breast cancer data set, then annotated on the original survey. For extreme outliers, corrections were made only if the value was deemed an error, i.e., an impossible value, probably due to a patient's misunderstanding of the question. Some additional corrections were made to the WBH data set to enable correct calculations of new variables.

After all data corrections were completed, the effect of race on each of the variables was examined. One-way analysis of variance (ANOVA) was run for each continuous variable. Chi-square analysis was conducted on each categorical variable.

Observations with values above the 95th percentile were omitted. After omitting observations, the ANOVA and Chi-square analyses were repeated for selected variables, which had extreme upper tail outliers. Results are summarized in Appendix 7.

RESULTS AND DISCUSSION

NON-SURVEY VARIABLES: Race and Patient Age

The WBH breast cancer data set (n=907) contained 719 white (79.3%), 121 African American (13.3%), and 67 Hispanic (7.4%) patients. Using ACTUR data and surveys, it was determined that 644 of the patients were alive and 263 were dead at the time the survey was administered. The distribution of live and dead patients did not differ significantly by race (Table 1). However, mean patient age at time of survey (31Dec1997) and mean age at death varied significantly among the three racial groups (Table 2). Whites were older than African Americans and Hispanics at both the time of the survey and at death.

Table 1. Distribution of live and dead patients by race.

	White		African American		Hispanic		Total		
Variable	No.	(%)	No.	(%)	No.	(%)	No.	(%)	$P>X^2$
Status @ Survey									0.120
Alive	516	(71.77)	77	(63.64)	51	(76.12)	644	(71.00)	
Dead	203	(28.23)	44	(36.36)	16	(23.88)	263	(29.00)	

Table 2. Age distribution at time of survey or at death.

Variable	N	#Missing*	Med	(Range)	CV	Mean	SD	Pr>F
Age @ Survey								0.0001
White	516	0	63	(24-100)	21.24	62.60	13.30	
African American	77	0	50	(28-82)	25.53	51.61	13.17	
Hispanic	51	0	56	(24-83)	24.42	54.18	13.23	
Total	644	0	61.5	(24-100)	22.85	60.62	13.85	
Age @ Death								0.0001
White	198	5	62	(26-98)	24.66	60.78	14.99	
African American	44	0	46	(24-71)	27.35	46.95	12.84	
Hispanic	16	0	52.5	(38-77)	24.64	53.38	13.15	
Total	258	5	58	(24-98)	26.62	57.97	15.43	

*Missing values were for 5 patients whose deaths were learned of from comments provided on returned surveys and were too recent for inclusion in the ACTUR system.

ORIGINAL AND DERIVED SURVEY VARIABLES

A discussion of variables follows in the order in which they appeared on the survey. Tables accompanying the discussion of variables are identified by survey question number(s) (e.g., Q23) and statements of the original survey question(s) or by statement(s) identifying derived variable(s). All percentages shown in the tables are column percentages (e.g., above in Table 1, 28.23% of whites were dead at the time of the survey).

Results are presented for all Chi-square tests that were performed, even if the test may have been invalid. A series of three dots in the probability column indicates that no statistical test was performed. A superscript letter (a,b,c,d,e,f) next to a Chi-square probability identifies the tests which may be invalid; the letter indicates the percentage of cells in the cross-tabulation having expected counts less than 5: a = 21-25%, b = 26-35%, c = 36-45%, d = 46-55%, e = 56-65%, f >65%.

Several variables have a high percentage of missing values. In many instances, especially questions dealing with personal habits such as diet or non-medical history such as "where patient lived longest," a large number of the missing values came from surveys that were CTR-completed rather than patient-completed. The information was not available in the medical records. For use in future analyses, a variable, "svygrp," was added to the WBH data set. It classifies each survey record according to its original processessing date of June 1998 or February 1999 ("Group I" or "Group II"). As noted in the Methods section, Group I (n=517) consists primarily of patient-completed surveys which usually had fewer missing answers than Group II (n=444) which was almost entirely CTR-completed surveys. Analyses could be run on just Group I surveys and the results compared to those presented in this report.

Mammograms

Questions 3-5 are summarized in the following two tables. Even though the Chi-square tests are possibly invalid, it is clear that compared to African Americans, a greater percentage of

whites and Hispanics have had a mammogram, and, have had them more often. Mean age at first mammogram differed significantly across race with African Americans having a first mammogram at a younger age than did whites and Hispanics.

Q3. "A mammogram is a special x-ray of the breast to look for breast cancer. Have you ever had a mammogram?"
Q5. "How often have you usually had mammograms?" (If Q3="Yes")

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Ever Had Mammogram									0.045[d]
Yes	603	(83.87)	88	(72.73)	55	(82.09)	746	(82.25)	
No	1	(0.14)	0	(0.00)	1	(1.49)	2	(0.22)	
Don't know	2	(0.28)	1	(0.83)	0	(0.00)	3	(0.33)	
Missing	113	(15.72)	32	(26.45)	11	(16.42)	156	(17.20)	
Freq. of Mammograms (n=746)									0.003[c]
Every yr	282	(46.77)	25	(28.41)	27	(49.09)	334	(44.77)	
Every other yr	40	(6.63)	2	(2.27)	0	(0.00)	42	(5.63)	
Irreg., >2 yrs	55	(9.12)	9	(10.23)	3	(5.45)	67	(8.98)	
None	2	(0.33)	1	(1.14)	0	(0.00)	3	(0.40)	
Missing	224	(37.15)	51	(57.95)	25	(45.45)	300	(40.21)	

Q4. "At about what age did you have your first mammogram?" (If Q3="Yes")

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Age @ 1st Mammogram (n=746)								0.0002
White	367	236	46	(24-87)	24.48	47.53	11.64	
African American	40	48	36.5	(18-54)	22.27	39.78	8.86	
Hispanic	25	30	46	(29-70)	23.35	45.68	10.67	
Total	432	314	45	(18-87)	24.74	46.71	11.56	

Cancer Discovery

Since a number of respondents had more than one answer for how their breast cancer was first discovered, multiple answers were coded on the survey and thus separate analyses were necessary for each answer to "first discovered." "I felt it" and "routine mammogram" were the most common ways in which respondents (regardless of race) first discovered their cancer. "Routine mammogram" was the only response that differed significantly among the three racial groups, with approximately 10% more of the white and Hispanic patients finding their cancer by routine mammograms compared to the African American patients.

The write-in explanations of "Found Other Way" are listed alphabetically in the second Q6 table on the following page. Each write-in answer only occurred 4 times at most; the answers were grouped into six broader categories for comparison by race, but expected values remained too scarce to obtain a valid Chi-square test. When the "other" responses were combined with the multiple choice responses, most patients' breast cancer was still discovered by either routine mammogram or by noticing it themselves.

Q6. "How was the cancer in your breast **first** discovered?"

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
How Cancer 1st Found (Multiple answers allowed)									
Routine MGM	256	(35.61)	27	(22.31)	22	(32.84)	305	(33.63)	0.016
I Felt It	269	(37.41)	53	(43.80)	29	(43.28)	351	(38.70)	0.298
Dr Felt It	53	(7.37)	10	(8.26)	5	(7.46)	68	(7.50)	0.942
Fd Other Way	59	(8.21)	8	(6.61)	5	(7.46)	72	(7.94)	0.826

Q6. "Found Other Way" explanations (n=72) as coded in data set.

Write-in Answer	ETHN	#	Write-in Answer	ETHN	#	Write-in Answer	ETHN	#
6 WKS AFT INJUR	Hispanic	1	CA NOT DETERMIN	White	1	NIPPLE DISCHARG	White	2
@ MASTITIS TRMT	White	1	CERV LYMP ND BX	Afr Am	1	NIPPLE INVERTED	White	4
@GOITER EVAL	White	1	DIMPLE ON BRST	White	3	NIPPLE LESION	White	1
BR FULLNESS	White	1	FD -PSYCHIA REF	Afr Am	1	NP FD THICKNESS	Hispanic	1
BR PAIN/SWOLLEN	White	2	FD @ GYN APPT	White	1	ON ADM FOR HEP	Afr Am	1
BR SORE/SWOLLEN	White	1	FD BY HUSBAND	White	1	ON ADM FOR SRG	White	1
BR SWOL/ERYTHEM	White	1	FD BY NP	Hispanic	1	PRE TO LUNG SRG	White	1
BREAST DISCHARG	White	1	FD-GI DR IN PHY	White	1	PT FD NECK LUMP	White	2
BREAST DISCHARG	Hispanic	1	FOR OTHER PROBL	White	1	RASH/FNG MASS	White	1
BREAST DRAINAGE	White	1	HEMATOMA	White	1	REAPPEAR BRUISE	White	1
BREAST FLUSHED	White	1	I FD CHG IN BRS	White	1	SKIN PROTRUSION	White	1
BREAST PAIN	White	9	I FD CYSTS	White	1	SORENESS	White	1
BREAST PAIN	Afr Am	1	LESION W/DRAIN	White	1	ULCR FNG MASS	Afr Am	1
BRST LOOKED DIF	White	1	LF SIDE SORE	White	1	ULCR LESION	White	1
BRST SWOLLEN	White	2	LPN FD@GYN EX	Afr Am	1	ULCR MASS	White	1
BY CT SCAN	White	1	NIP INV/FNG MAS	Afr Am	1	VISIBLE LUMP	White	1
BY NURS HM PERS	Afr Am	1	NIP LESION ULCR	Hispanic	1	W/CYST FIB DX	White	1
BY RADIOACT EKG	White	1	NIPPLE BLEEDING	White	2	XMG@BN PAIN ADM	White	1

Q6. Derived variable, groups "Found Other Way" explanations into six categories.
Q6. Derived variables which regroup **all** answers to "How 1st Found," including "Other" explanations.

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Found Other Way (n=72)									0.095[f]
Brst/Nip Disch	11	(18.64)	2	(25.00)	2	(40.00)	15	(20.83)	
Brst Abnor/Dif	19	(32.20)	0	(0.00)	0	(0.00)	19	(26.39)	
Brst/Side Pain	14	(23.73)	1	(12.50)	0	(0.00)	15	(20.83)	
Fd by Husb/NP	3	(5.08)	2	(25.00)	2	(40.00)	7	(9.72)	
Fd w/Oth Dx/Rx	11	(18.64)	3	(37.50)	1	(20.00)	15	(20.83)	
Other	1	(1.69)	0	(0.00)	0	(0.00)	1	(1.39)	
How Cancer 1st Found, Version 2 (Multiple answers allowed)									
Routine MGM	256	(35.61)	27	(22.31)	22	(32.84)	305	(33.63)	0.016
Fd by Self/Husb	300	(41.72)	54	(44.63)	29	(43.28)	383	(42.23)	0.822
Fd by Dr/Oth HlthC	54	(7.51)	12	(9.92)	7	(10.45)	73	(8.05)	0.503
Fd 2nd to Oth Dx/Rx	11	(1.53)	3	(2.48)	1	(1.49)	15	(1.65)	0.746[b]

Cancer Confirmation

Analysis of variance performed failed to find any differences in the mean confirmation times of the three racial groups (table Q7 below). However, when analysis was applied to a 95-percentile subsample (i.e., omitting the top 5% highest-valued mean confirmation times from the analysis), the mean time was found to differ significantly (whites:33.5 days, African Americans:48.8 days, Hispanics: 41.0 days; p=0.0327)(Appendix 7).

There may have been some confusion concerning questions 8 and 9 ("delayed seeing doctor"). Several patients responded there was "no delay," but then selected or wrote in a reason for delay." The results shown below for "reasons for delay" are only for those patients who responded "Yes" to having delayed.

Q7. "After the cancer was first discovered, how much time passed until tests were done and a doctor said you definitely had cancer?"

Variable	N	#Missing	Med	(Range)*	CV	Mean	SD	Pr>F
Days til DX Conf								0.6905
White	459	260	17	(0-730)	198.45	55.54	110.21	
African American	65	56	31	(1-730)	167.51	59.31	99.35	
Hispanic	41	26	31	(4-730)	183.58	70.73	129.85	
Total	565	342	21	(0-730)	193.45	57.07	110.43	

*0 days means diagnosis was confirmed on same day as initial discovery.

Q8. " After the cancer was discovered, was there a delay in seeing a doctor?"
Q9. "What was the reason for your delay in seeing a doctor?" (If Q8=Yes)

	White		African American		Hispanic		Total		
Variable	No.	(%)	No.	(%)	No.	(%)	No.	(%)	$P>X^2$
Delay Seeing Dr									0.211
Yes	47	(6.54)	7	(5.79)	4	(5.97)	58	(6.39)	
No	470	(65.37)	67	(55.37)	44	(65.67)	581	(64.06)	
Missing	202	(28.09)	47	(38.84)	19	(28.36)	268	(29.55)	
Reasons for Delay (Multiple answers allowed; n=58)									
Not told to See Dr	1	(2.13)	0	(0.00)	0	(0.00)	1	(1.72)	. . .
First Avail Appt	24	(51.06)	6	(85.71)	2	(50.00)	32	(55.17)	0.223[f]
Appt Clerk Misundrstd	2	(4.26)	0	(0.00)	1	(25.00)	3	(5.17)	. . .
Was Not Concerned	2	(4.26)	0	(0.00)	0	(0.00)	2	(3.45)	. . .
Afraid Was Bad News	2	(4.26)	1	(14.29)	0	(0.00)	3	(5.17)	. . .
Don't Like Visit Dr	2	(4.26)	0	(0.00)	0	(0.00)	2	(3.45)	. . .
Not Expect Dr to Help	0	(0.00)	0	(0.00)	0	(0.00)	0	(0.00)	. . .
Other Reason	19	(40.43)	1	(14.29)	0	(0.00)	20	(34.48)	0.128[f]

Q9. "Other Reason(s) for Delay" explanations as coded in data set.

Write-in Answer	ETHN	#	Write-in Answer	ETHN	#	Write-in Answer	ETHN	#
1ST DR NEG DX	White	1	HX-CYSTS&LUMPS	White	1	RMOV WRNG TUMR	White	1
8MPREG, DR MISDX	White	1	LOST TO FOL-UP	White	2	SIGNIF DENIAL	Afr Am	1
BX RESULT DELAY	White	4	MIS DX	White	1	TOLD NO PROBLEM	White	1
DIDNT WANT SURG	White	1	PERSONAL ADJUST	White	1	TOLD WAIT 1 MCY	White	1
DR DELAYED BX	White	1	POOR MGRMS/READ	White	1	VAC,DR SD NO CA	White	1
DR OUT;LOST XRAY	White	1	RAD SD RECK 6MO	White	1			

Note: Some of the more confusing abbreviations in coded answers are as follows: 8MPREG=8 mos. pregnant, BX=biopsy, RAD SD RECK 6MO=radiologist said recheck in 6 mos., MCY=mentrual cycle, VAC=vacation

Cancer Treatments

Approximately 97% of all patients had surgery for their breast cancer. No significant differences by race were detected in the percentage of patients having surgery. Type of surgery is summarized for those patients who had surgery. "Type of surgery" responses were coded to retain as much detail as possible. Codes included designations for general type of surgery (mastectomy, lumpectomy, reconstruction, and biopsy) and for location (left, right, and bilateral), and allowed for combinations of surgery types.

The detailed coding created small cell sizes. Chi-square analysis rendered no significant differences as a result. Mastectomies were the most prevalent type of surgery received.

Location of the tumor showed no significant association with race. Location was unknown for nearly half of the responses. Among types of surgery, only mastectomies and lumpectomies had valid Chi-square tests. Both types showed a significant association with race.

While more than 60% of each racial group had mastectomies, whites had a higher proportion compared to African Americans and Hispanics. African Americans had more lumpectomies (31%) compared to Hispanics (26%) and whites (21%).

Chemotherapy, radiotherapy, tamoxifen, and bone marrow transplant/harvest were the common types of additional treatments reported by most patients. Each combination of these treatments which occurred in the surveys was coded to a different category. Analysis of treatments as originally coded showed a highly significant association with race ($p=0.001$). But, more than a third of the combined treatments had fewer than 5 cases, and were therefore non-significant. Since the existing treatment variable allowed combinations of treatments, five new variables were created to summarize the combined treatments. Chemotherapy, the most prevalent type of treatment adjuvant to surgery, had a significant association with race ($p=0.001$). African Americans showed the highest percentage (73%) of adjuvant chemotherapy, followed by Hispanics (60%), and whites (45%). Radiotherapy, Tamoxifen, and bone marrow treatments did not show significant associations with race.

Q10. "Did you have surgery?"

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Had Surgery									0.694[c]
Yes	697	(96.94)	120	(99.17)	65	(97.01)	882	(97.24)	
No	12	(1.67)	1	(0.83)	1	(1.49)	14	(1.54)	
Missing	10	(1.39)	0	(0.00)	1	(1.49)	11	(1.21)	

Q10. "If you answered YES, what type of surgery did you have?" (If Q9=Yes).

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Type of Surgery (n=882)									0.375[f]
MRM	172	(24.68)	16	(13.33)	11	(16.92)	199	(22.56)	
MRM-L	144	(20.66)	25	(20.83)	11	(16.92)	180	(20.41)	
MRM-R	137	(19.66)	29	(24.17)	17	(26.15)	183	(20.75)	
MRM-Bi	24	(3.44)	2	(1.67)	1	(1.54)	27	(3.06)	
LUM	107	(15.35)	25	(20.83)	9	(13.85)	141	(15.99)	
LUM-L	19	(2.73)	4	(3.33)	5	(7.69)	28	(3.17)	
LUM-R	17	(2.44)	7	(5.83)	2	(3.08)	26	(2.95)	
LUM-Bi	3	(0.43)	0	(0.00)	1	(1.54)	4	(0.45)	
MRM+Rec	8	(1.15)	1	(0.83)	1	(1.54)	10	(1.13)	
MRM+LUM	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	
MRM-L+Rec	3	(0.43)	1	(0.83)	0	(0.00)	4	(0.45)	
MRM-L+LUM-R	4	(0.57)	0	(0.00)	0	(0.00)	4	(0.45)	
MRM-L+LUM-R+Rec	2	(0.29)	0	(0.00)	0	(0.00)	2	(0.23)	
MRM-R+LUM-L	2	(0.29)	1	(0.83)	1	(1.54)	4	(0.45)	
MRM-Bi+Rec	4	(0.57)	1	(0.83)	0	(0.00)	5	(0.57)	
Bx	20	(2.87)	3	(2.50)	2	(3.08)	25	(2.83)	
Bx-L	4	(0.57)	1	(0.83)	0	(0.00)	5	(0.57)	
Bx-R	1	(0.14)	2	(1.67)	0	(0.00)	3	(0.34)	
Other surg	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	
Missing	24	(3.44)	2	(1.67)	4	(6.15)	30	(3.40)	

Note: MRM=mastectomy, LUM=lumpectomy, Rec=reconstruction, Bx=biopsy, -L=left, -R=right, Bi=bilateral.

Q10. Derived variables (If Q9=Yes, n=882): group type of surgery by general location, count number of patients who had each general type of surgery (multiple answers possible), group by surgery intensity, and redo intensity groups, but without the single "other" category.

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
CA Location									0.262
Right	155	(22.24)	38	(31.67)	19	(29.23)	212	(24.04)	
Left	170	(24.39)	31	(25.83)	16	(24.62)	217	(24.60)	
Bilateral	39	(5.60)	4	(3.33)	3	(4.62)	46	(5.22)	
Unknown	333	(47.78)	47	(39.17)	27	(41.54)	407	(46.15)	
Count of General Surgery Types (Multiple answers allowed)									
MRM	501	(71.88)	76	(63.33)	42	(64.62)	619	(70.18)	0.100
LUM	155	(22.24)	37	(30.83)	18	(27.69)	210	(23.81)	0.093
BX	25	(3.59)	6	(5.00)	2	(3.08)	33	(3.74)	0.721[b]
Reconstruction	17	(2.44)	3	(2.50)	1	(1.54)	21	(2.38)	0.898[b]

(Cont.)

Q10 (Cont.). Derived variables (If Q9=Yes, n=882): group type of surgery by general location, count number of patients who had each general type of surgery (multiple answers possible), group by surgery intensity, and redo intensity groups, but without the single "other" category.

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Surgery Level									0.351[d]
MRM	501	(71.88)	76	(63.33)	42	(64.62)	619	(70.18)	
LUM at Most	146	(20.95)	36	(30.00)	17	(26.15)	199	(22.56)	
BX at Most	25	(3.59)	6	(5.00)	2	(3.08)	33	(3.74)	
Other	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	
Missing	24	(3.44)	2	(1.67)	4	(6.15)	30	(3.40)	
Surgery Level (Version 2)									0.196[b]
MRM	501	(71.98)	76	(63.33)	42	(64.62)	619	(70.26)	
LUM at Most	146	(20.98)	36	(30.00)	17	(26.15)	199	(22.59)	
BX at Most	25	(3.59)	6	(5.00)	2	(3.08)	33	(3.75)	
Missing	24	(3.45)	2	(1.67)	4	(6.15)	30	(3.41)	

Q11. "What other treatment did you receive from your doctor?"

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Additional Treatments									0.001[c]
CT	99	(13.77)	34	(28.10)	12	(17.91)	145	(15.99)	
RT	78	(10.85)	5	(4.13)	6	(8.96)	89	(9.81)	
CT+RT	99	(13.77)	34	(28.10)	13	(19.40)	146	(16.10)	
TAM	88	(12.24)	8	(6.61)	7	(10.45)	103	(11.36)	
CT+TAM	31	(4.31)	8	(6.61)	3	(4.48)	42	(4.63)	
RT+TAM	32	(4.45)	2	(1.65)	1	(1.49)	35	(3.86)	
CT+RT+TAM	39	(5.42)	7	(5.79)	9	(13.43)	55	(6.06)	
CT+BM	16	(2.23)	3	(2.48)	0	(0.00)	19	(2.09)	
CT+BM+TAM	3	(0.42)	0	(0.00)	0	(0.00)	3	(0.33)	
CT+RT+TAM+BM	11	(1.53)	1	(0.83)	2	(2.99)	14	(1.54)	
Other	2	(0.28)	0	(0.00)	0	(0.00)	2	(0.22)	
Othr, NS	6	(0.83)	0	(0.00)	0	(0.00)	6	(0.66)	
None	109	(15.16)	9	(7.44)	7	(10.45)	125	(13.78)	
Missing	82	(11.40)	9	(7.44)	6	(8.96)	97	(10.69)	
Counts of Additional Treatments (Multiple answers allowed)									
CT	322	(44.78)	88	(72.73)	40	(59.70)	450	(49.61)	0.001
RT	283	(39.36)	50	(41.32)	32	(47.76)	365	(40.24)	0.490
TAM	204	(28.37)	26	(21.49)	22	(32.84)	252	(27.78)	0.180
BM	54	(7.51)	5	(4.13)	3	(4.48)	62	(6.84)	0.301
Other	8	(1.11)	0	(0.00)	0	(0.00)	8	(0.88)	0.382[a]

Note: CT=Chemotherapy, RT=Radiotherapy, Tam=Tamoxifen, BM=Bone Marrow Transplant/Harvest

Other Cancer

Overall, 16.4% of all patients had another primary cancer. Of those who had another primary cancer, most had 1 additional primary cancer. The percentage of patients who had other primary cancers differed significantly with race. A greater percentage of whites than African Americans

or Hispanics had other primary cancers in addition to breast cancer. It should be noted that whites had the smallest percentage of missing values for this variable. Note: Values in the second table below are for question 13, to which patients responded "yes" to having other cancers.

Q12. "Do you have any other primary cancers?"

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Other Primary CA									0.002
Yes	127	(17.66)	15	(12.40)	7	(10.45)	149	(16.43)	
No	392	(54.52)	51	(42.15)	38	(56.72)	481	(53.03)	
Missing	200	(27.82)	55	(45.45)	22	(32.84)	277	(30.54)	

Q13. "[Select the type of] Additional primary cancer:" (If Q12=Yes).
Q13. Derived variable, counts the number of additional types of primaries patient had (If Q12=Yes).

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Additional Cancers (Multiple answers allowed, n=149)									
Colon	10	(7.87)	0	(0.00)	0	(0.00)	10	(6.71)	0.395[b]
Bladder	1	(0.79)	0	(0.00)	0	(0.00)	1	(0.67)	0.916[d]
Skin	45	(34.65)	1	(6.67)	0	(0.00)	45	(30.20)	0.017[d]
Ovary	4	(3.15)	1	(6.67)	0	(0.00)	6	(3.36)	0.682[d]
Kidney	2	(1.57)	1	(6.67)	0	(0.00)	3	(2.01)	0.384[d]
Pancreas	0	(0.00)	0	(0.00)	0	(0.00)	0	(0.00)	. . .
Lung	10	(7.87)	3	(20.00)	0	(0.00)	13	(8.72)	0.204[b]
Brain	2	(1.57)	2	(13.33)	0	(0.00)	4	(2.68)	0.026[d]
Cervical/Uterine	13	(10.24)	2	(13.33)	3	(42.86)	18	(12.08)	0.036[b]
Breast	31	(24.41)	5	(33.33)	2	(28.57)	38	(25.50)	0.741[b]
Bone	5	(3.94)	0	(0.00)	1	(14.29)	6	(4.03)	0.281[b]
Others	16	(12.60)	4	(26.67)	1	(14.29)	21	(14.09)	0.334[b]
No. of Additional Cancers/Patient (n=149)									0.314[f]
0	3	(2.36)	0	(0.00)	0	(0.00)	3	(2.01)	
1	112	(88.19)	11	(73.33)	7	(100.00)	130	(87.25)	
2	10	(7.87)	4	(26.67)	0	(0.00)	14	(9.40)	
3	2	(1.57)	0	(0.00)	0	(0.00)	2	(1.34)	

Relatives with Breast Cancer

For most of the familial variables, cell sizes were too small to obtain valid Chi-square tests. There were no racial differences associated with having a mother or maternal aunt with cancer. The same wa true for patients with no history of familial breast cancer. The probability that a woman with breast cancer would have a sister with breast cancer approached statistical significance at p=0.059 overall. It should be noted that the percentage of African American women with maternal aunts with cancer was double the percentage of African American women who had sisters with cancer. White and Hispanic women were more likely to have sisters than maternal aunts with cancer.

Two new variables were created: maternal or paternal side of family (Groups-I) and "closeness" or level of relationship (Groups-II). A valid Chi-square test was obtained for Groups-II.

Another derived variable specifies how many types of relatives a patient marked on the survey and provides a rough estimate of number of relatives affected. Results show that the number of relatives with breast cancer was significantly associated with race (p=0.035). A higher percentage of white patients reported having relatives with breast cancer compared to African Americans and Hispanics. A stronger association was indicated when all relatives with cancer were collapsed into a single "yes" category. Having relatives with breast cancer was strongly associated with race (p=0.006). Thirty percent of whites had relatives with breast cancer compared to 21% of Hispanics and 17% of African Americans.

Notes: Total counts and percentages may be off due to a mistake in the survey form: "Father" was inadvertently omitted as a response choice. Three variables were added to retain some specially-coded, non-specific responses about relatives and to allow correction of a few maternal relative and "none" category.values in the data file. Non-specific comments written by patients on the survey were captured during data coding by marking impossible combinations (no relative + a maternal relative, e.g., unspecified aunt was coded by selecting "none" and "maternal aunt." (See Appendix 6 for SAS code used to create three new variables and remove "special" coding so correct counts were obtained for original variables.

Q14. "Have any of your close relatives had **breast cancer**?"

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Relatives w/BrCA (Multiple answers allowed)									
None	312	(43.39)	54	(44.63)	36	(53.73)	402	(44.32)	0.265
My Daughter	9	(1.25)	0	(0.00)	0	(0.00)	9	(0.99)	. . .
My Son	2	(0.28)	0	(0.00)	0	(0.00)	2	(0.22)	. . .
My Mother	67	(9.32)	7	(5.79)	2	(2.99)	76	(8.38)	0.109
My Sister	72	(10.01)	4	(3.31)	6	(8.96)	82	(9.04)	0.059
My Brother	4	(0.57)	1	(0.83)	0	(0.00)	5	(0.55)	. . .
My Mother's Mother	29	(4.03)	3	(2.48)	0	(0.00)	32	(3.53)	. . .
My Father's Mother	11	(1.53)	0	(0.00)	1	(1.49)	12	(1.32)	0.392[b]
My Mother's Father	3	(0.42)	0	(0.00)	0	(0.00)	3	(0.33)	. . .
My Father's Father	1	(0.14)	1	(0.83)	0	(0.00)	2	(0.22)	. . .
My Mother's Sister	48	(6.68)	8	(6.61)	2	(2.99)	58	(6.39)	0.495
My Father's Sister	30	(4.17)	3	(2.48)	1	(1.49)	34	(3.75)	. . .
My Mother's Brother	5	(0.70)	1	(0.83)	0	(0.00)	6	(0.66)	. . .
My Father's Brother	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	. . .
My Aunt*	1	(0.14)	1	(0.83)	2	(2.99)	4	(0.44)	. . .
My Grandmother*	1	(0.14)	0	(0.00)	1	(1.49)	2	(0.22)	. . .
A Relative*	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	. . .

*Added variables for non-specific responses.

Q14. Derived variables, two different groupings of all relatives.

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Relative Groups-I									0.001[b]
None	312	(43.39)	54	(44.63)	36	(53.73)	402	(44.32)	
Immed. Family	135	(18.78)	12	(9.92)	8	(11.94)	155	(17.09)	
Maternal Relative	53	(7.37)	7	(5.79)	2	(2.99)	62	(6.84)	
Paternal Relative	28	(3.89)	2	(1.65)	1	(1.49)	31	(3.42)	
Unkn, Non-immed.	2	(0.28)	0	(0.00)	3	(4.48)	5	(0.55)	
Missing	189	(26.29)	46	(38.02)	17	(25.37)	252	(27.78)	
Relative Groups-II									0.044
None	312	(43.39)	54	(44.63)	36	(53.73)	402	(44.32)	
Immed. Family	135	(18.78)	12	(9.92)	8	(11.94)	155	(17.09)	
Grandparent	32	(4.45)	2	(1.65)	1	(1.49)	35	(3.86)	
Aunt/Uncle	50	(6.95)	7	(5.79)	5	(7.46)	62	(6.84)	
Missing	190	(26.43)	46	(38.02)	17	(25.37)	253	(27.89)	

Q14. More derived variables for summarizing relatives with breast cancer.

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
No. of Relatives w/Breast CA (version 2)									0.035
0	312	(43.39)	54	(44.63)	36	(53.73)	402	(44.32)	
1	170	(23.64)	15	(12.40)	13	(19.40)	198	(21.83)	
2	33	(4.59)	5	(4.13)	1	(1.49)	39	(4.30)	
3 to 5	15	(2.09)	1	(0.83)	0	(0.00)	16	(1.76)	
Any Relatives w/Breast CA									0.006
Yes	218	(30.32)	21	(17.36)	14	(20.90)	253	(27.89)	
No	312	(43.39)	54	(44.63)	36	(53.73)	402	(44.32)	
Missing	189	(26.29)	46	(38.02)	17	(25.37)	252	(27.78)	

Children

Although the survey intended to elicit responses to reflect only the number of birth children, some patients noted both birth and adopted children. (In such cases, only the number of birth children was entered in the data record.) It is possible that other patients included adopted children in their answer without writing a comment about adopted children on the survey.

Having children appears to differ somewhat by race, with African Americans reporting the least number and Hispanics reporting the most. More than a quarter of the African American patients did not respond to this question. The number of children and the age when a patient had her first child did not vary significantly by race. Responses to breast-feeding varied significantly by race. [Number of children had several extreme upper values and analysis was rerun on a 95-percentile subsample, but test results remained nonsignificant (see Appendix 7 for summary tables)].

Notes: There was an error in the answer choices for Q18 (breast-feeding) on the survey form. The choices were "No," "Yes, the first," "Yes, all," and "Yes, more than one, but not all." There was no choice for breast-feeding only one child who was not the first child. Several patients who had that situation indicated so on the survey form. In coding the survey, "Yes, the first" was interpreted to read "Yes, only one." The second choice answer was then marked on all surveys where respondents had indicated breast-feeding of only one child.

See Appendix 5 for additional information on Q18 (breast-feeding) responses. Several patients added comments, particularly on the length of time they breast-fed. These respondents weren't sure if the time involved should justify a positive response to the question. Any future analysis of breast-feeding responses in this data set should consider the information provided in Appendix 5.

Q15. "Do you have children?"
Q 18. "Did you breast-feed your babies?" (If Q15=Yes).

Variable	White No.	White (%)	African American No.	African American (%)	Hispanic No.	Hispanic (%)	Total No.	Total (%)	P>X²
Had Children									0.060
Yes	513	(71.35)	73	(60.33)	53	(79.10)	639	(70.45)	
No	63	(8.76)	15	(12.40)	3	(4.48)	81	(8.93)	
Missing	143	(19.89)	33	(27.27)	11	(16.42)	187	(20.62)	
Breast-fed Babies (n=639)									0.020
Yes, all	58	(11.31)	4	(5.48)	5	(9.43)	67	(10.49)	
Yes, >one, not all	35	(6.82)	4	(5.48)	4	(7.55)	43	(6.73)	
Yes, one	80	(15.59)	5	(6.85)	9	(16.98)	94	(14.71)	
No	172	(33.53)	19	(26.03)	13	(24.53)	204	(31.92)	
Missing	168	(32.75)	41	(56.16)	22	(41.51)	231	(36.15)	

Q16. " How many children do you have?" (If Q15=Yes).
Q17. " How old were you when you had your first baby?" (If Q15=Yes).

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
No. Children (n=639)								0.6714
White	449	64	2	(1-11)	49.69	2.69	1.34	
African American	63	10	2	(1-7)	53.66	2.86	1.53	
Hispanic	48	5	2	(1-7)	54.35	2.75	1.49	
Total	560	79	2	(1-11)	50.56	2.72	1.37	
Age @ 1st Child (n=639)								0.8749
White	357	156	22	(16-43)	19.56	23.31	4.56	
African American	38	35	22.5	(14-35)	22.27	22.95	5.11	
Hispanic	32	21	22	(17-38)	19.91	23.06	4.59	
Total	427	212	22	(14-43)	19.79	23.26	4.60	

Height and Weight

Mean patient height and weight varied significantly by race. BMI, which expresses a relationship between the two measures, was calculated using Quetelet's Body Mass Index, i.e., BMI = weight (kg) / height(meter^2). Analysis of the survey data found that mean BMI varied significantly by race, with whites having a lower BMI compared to African Americans and Hispanics (p=0.0007).

Q19. "What is your height in feet and inches?"
Q20. "What is your weight in pounds?"
Q19-20, Derived variable, Quetelet's Body Mass Index (BMI)

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Pt Ht (in)								0.0017
White	635	84	65	(57-81)	4.25	64.64	2.75	
African American	104	17	65	(60-76)	3.81	64.95	2.47	
Hispanic	59	8	63	(57-71)	3.69	63.44	2.34	
Total	798	109	64.5	(57-81)	4.19	64.59	2.71	
Pt Wt (lb)								0.0005
White	650	69	147	(75-290)	22.09	153.34	33.88	
African American	105	16	160	(110-265)	20.71	167.18	34.62	
Hispanic	61	6	150	(95-250)	20.74	154.54	32.05	
Total	816	91	150	(75-290)	21.98	155.21	34.11	
Body Mass Index								0.0007
White	631	88	24.9	(12.5-51.4)	20.86	25.78	5.38	
African American	103	18	26.8	(16.3-48.5)	20.04	27.81	5.57	
Hispanic	59	8	26.4	(18.3-44.3)	20.55	27.13	5.57	
Total	793	114	25.1	(12.5-51.4)	20.89	26.14	5.46	

Tobacco Use

Smoking history was significiantly associated with race (p=0.001). Fewer Hispanics reported current or previous use of cigarettes, a higher percentage of whites reported they had quit smoking, and more African Americans reported they were current smokers. The average number of years smoked and the average number of cigarettes smoked per day also differed significantly by race. White patients had smoked for more years than African Americans and Hispanics (p=0.005), as well as smoking more cigarettes per day (p=0.0018).

Number of cigarettes per day had several large-value outliers. Analysis was repeated on a 95-percentile subsample, but results were not substantially different (see Appendix 7 for summary tables).

Q21. "Do you smoke?"

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Smoker									0.001
Yes	103	(14.33)	23	(19.01)	6	(8.96)	132	(14.55)	
Previously	190	(26.43)	18	(14.88)	9	(13.43)	217	(23.93)	
No	330	(45.90)	59	(48.76)	48	(71.64)	438	(48.18)	
Missing	96	(13.35)	21	(17.36)	4	(5.97)	121	(13.34)	

Q22. "How many years have you smoked?" (If Q21=Yes/Previously).
Q23. "How many cigarettes do (did) you smoke on an average day?" (If Q21=Yes/Previously).

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
No. Yrs Smoked (n=349)								0.0050
White	249	44	26	(2-65)	54.21	27.67	15.00	
African American	35	6	20	(4-50)	49.88	19.77	9.86	
Hispanic	10	5	20	(5-41)	49.59	21.00	10.41	
Total	294	55	25	(2-65)	55.02	26.51	14.58	
No. Cigarettes/Day (n=349)								0.0018
White	263	30	20	(1-80)	61.10	21.26	12.99	
African American	37	4	10	(1-38)	74.15	14.51	10.76	
Hispanic	12	3	11	(3-40)	77.64	13.25	10.29	
Total	312	37	20	(1-80)	63.93	20.15	12.88	

Alcohol Use

Responses to alcohol use (yes or no) varied by race (p=0.067). Percentage of Hispanics who currently drank was approximatley half of that reported by whites and African Americans. The percentage of African Americans who were previous drinkers was almost double the percentages of previous white and Hispanic drinkers. Analysis of the average number of drinks per day did not yield a valid Chi-square test. A greater proportion of African American patients, compared to whites and Hispanics, reported having less than one drink per day; a much lower proportion reported having an average of 1-2 drinks per day. The most common response was "less than 1 drink," regardless of race. (Notes: There was an error in the given responses to Q25, concerning the number of drinks per day. The third choice should have read "More than 2 drinks a day" rather than "More than 3" per day. Also, some patients may have skipped the alcohol questions due to an error in Q21 (Do you smoke?). For patients who answered "no," Q21 instructed them to skip to "#28" when it should have said "#26.")

There was no significant difference in the age patients began drinking, although African Americans appeared to start at a slightly younger age than whites and Hispanics. Results were the same when analysis was based on a 95-percentile subsample (See Appendix 7 for summary tables). However, the age patients quit drinking showed stronger differences by race. The average age for discontinuing alcohol use was lowest for African Americans and highest for whites. The number of years a patient drank varied significantly by race (p=0.007), with whites drinking the most years and African Americans the least.

Q24. "Do you drink alcohol?

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Drink Alcohol									0.067
Yes	238	(33.10)	37	(30.58)	13	(19.40)	288	(31.75)	
Previously, not now	59	(8.21)	16	(13.22)	5	(7.46)	80	(8.82)	
No	242	(33.66)	37	(30.58)	33	(49.25)	312	(34.40)	
Missing	180	(25.03)	31	(25.62)	16	(23.88)	227	(25.03)	

Q25. "A drink is 1 can or bottle of beer, 1 glass of wine, 1can or 1 bottle of wine cooler, 1 cocktail, or 1 shot of liquor. How many drinks do (did) you drink on average?" (If Q24=Yes/Previously)

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
No. Drinks/Day (n=368)									0.089[b]
< 1	177	(59.60)	35	(66.04)	10	(55.56)	222	(60.33)	
1-2	69	(23.23)	4	(7.55)	4	(22.22)	77	(20.92)	
> 3	22	(7.41)	3	(5.66)	1	(5.56)	26	(7.07)	
Missing	29	(9.76)	11	(20.75)	3	(16.67)	43	(11.68)	

Q26. "How old were you when you started to drink?" (If Q24=Yes/Previously)
Q27. "How old were you when you stopped drinking?" (If Q24=Yes/Previously)
Q26-27 Derived variable, number of years patient drank alcohol (If Q24=Yes/Previously).

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Age Began Drink (n=386)								0.5439
White	159	138	21	(14-65)	35.38	22.87	8.09	
African American	18	35	19.5	(15-33)	22.12	20.78	4.60	
Hispanic	9	9	25	(12-33)	28.05	23.22	6.51	
Total	186	182	21	(12-65)	34.17	22.69	7.75	
Age Ended Drink (n=386)								0.0793
White	49	248	50	(21-86)	28.42	52.12	14.82	
African American	12	41	38.5	(22-64)	25.78	41.75	10.76	
Hispanic	3	15	41	(32-66)	38.02	46.33	17.62	
Total	64	304	50	(21-86)	29.34	49.91	14.64	
No. Yrs Drank (n=386)								
White	156	141	37.5	(1-68)	40.46	36.56	14.79	0.0077
African American	18	35	23	(1-48)	51.19	25.72	13.17	
Hispanic	9	9	33	(12-51)	42.12	30.33	12.78	
Total	183	185	35	(1-68)	29.34	49.91	14.64	

Diet and Exercise

The large numbers of missing responses in regard to diet and physical activity questions reflect the scarcity of information on diet and exercise in the CTR-completed surveys. This type of information was frequently not available in the medical records examined at BAMC's Tumor

Registry office. (Further analysis should focus on the first group of surveys, which consisted primarily of voluntary patient data.)

A valid Chi-square test was obtained from analysis of responses to the exercise question (Q31). The percentage of whites who had non-stop physical activity three or more times per week was roughly twice that for African Americans or Hispanics. (Note: Several patients added write-in comments concerning their physical activity level. Researchers should review these comments before doing additional analyses of this data. Coded answers and the comments are presented by survey identification number in Appendix 5.)

Q28-Q31. "How often do you:
Eat foods high in saturated fats such as beef, hamburger, pork, sausage, butter, whole milk, cheese?"
Eat foods high in salt or sodium such as cold cuts, bacon, canned soups, potato chips, etc.?"
Eat high fiber foods such as whole grain breads, cereals, bran, raw fruit, or raw vegetables?"
Do at least 20 minutes of non-stop physical activity (aerobics, running, fast walking, biking, swimming, dancing, etc...)?"

Variable	White No.	White (%)	African American No.	African American (%)	Hispanic No.	Hispanic (%)	Total No.	Total (%)	$P>X^2$
Eat Foods High in Saturated Fats									0.096[b]
At every meal	3	(0.42)	1	(0.83)	0	(0.00)	4	(0.44)	
Daily	82	(11.40)	11	(9.09)	5	(7.46)	98	(10.80)	
3-5 days/week	138	(19.19)	11	(9.09)	14	(20.90)	163	(17.97)	
< 3 days/week	149	(20.72)	20	(16.53)	11	(16.42)	180	(19.85)	
Never	7	(0.97)	1	(0.83)	0	(0.00)	8	(0.88)	
Missing	340	(47.29)	77	(63.64)	37	(55.22)	454	(50.06)	
Eat Foods High in Salt									0.002[c]
At every meal	0	(0.00)	1	(0.83)	0	(0.00)	1	(0.11)	
Daily	27	(3.76)	6	(4.96)	2	(2.99)	35	(3.86)	
3-5 days/week	102	(14.19)	7	(5.79)	6	(8.96)	115	(12.68)	
< 3 days/week	226	(31.43)	26	(21.49)	22	(32.84)	274	(30.21)	
Never	29	(4.03)	3	(2.48)	0	(0.00)	32	(3.53)	
Missing	335	(46.59)	78	(64.46)	37	(55.22)	450	(49.61)	
Eat High-Fiber Foods									0.001[b]
At every meal	33	(4.59)	3	(2.48)	2	(2.99)	38	(4.19)	
Daily	247	(34.35)	17	(14.05)	16	(23.88)	280	(30.87)	
3-5 days/week	69	(9.60)	19	(15.70)	8	(11.94)	96	(10.58)	
< 3 days/week	36	(5.01)	4	(3.31)	3	(4.48)	43	(4.74)	
Never	1	(0.14)	1	(0.83)	1	(1.49)	3	(0.33)	
Missing	333	(46.31)	77	(63.64)	37	(55.22)	447	(49.28)	
Non-stop Physical Activity									0.013
3 or more times/wk	146	(20.31)	16	(13.22)	7	(10.45)	169	(18.63)	
1-2 times/week	103	(14.33)	15	(12.40)	10	(14.93)	128	(14.11)	
Never	122	(16.97)	11	(9.09)	12	(17.91)	145	(15.99)	
Missing	348	(48.40)	79	(65.29)	38	(56.72)	465	(51.27)	

Menstrual Cycle / Menopause

The mean age when patients had their first menstrual period (Q32) varied significantly by race (p=0.0423): Hispanic patients averaged the earliest age at menarche, African Americans slightly older, and whites the oldest. Whites in this study were significantly more likely to be menopausal than were African Americans or Hispanics (p=0.001). African Americans were significantly younger, on average, at last menstrual cycle than whites and Hispanics (p=0.002; Q34). Differences by race in the average number of years patients menstruated (if menopausal) was weakly significant (p=0.0842). African Americans mentruated a mean of 30.0 years, whites 33.2 years, and Hispanics 34.3 years.

Responses alerted researchers to flaws in the question about menopause (Q33), which created confusion in the respondents' answers. The question asked whether the respondent had gone through menopause or change of life, but failed to discern whether menopause occurred before or after treatment for breast cancer. Respondents changed their answers or marked no answer; they also volunteered additional information. Comments usually concerned having had surgery or a hysterectomy. Since a large number of patients volunteered such information, a variable was added to identify patients known to have had a hysterectomy or similar surgery.

Evidence of a problem with the question of patient's age at "last regular period" revealed a possible misunderstanding of the question. Five percent of all patients gave ages greater than 56 years (max=69). When the number of years of menstration was calculated, the results showed 10% of all patients had menstrual cycles for more than 42 years and 5%, for more than 45 years (max=54). The validity of patients' responses is somewhat questionable. Menopause normally occurs between ages 45 and 60, and in the US, menstrual cycles stop completely by the average age of 51. Also, the natural life of a woman's ovaries is about 35 years. There may also have been some confusion on the question of taking estrogen replacement therapy (ERT) for the change of life. A number of patients did not skip this question, even if they were not yet menopausal; different results are obtained if data are summarized for all observations versus for only patients who were menopausal.

When analysis was based on all observations, the percentage of patients who had had hysterectomies did not differ significantly by race. However, when analysis was done conditional on being menopausal, then hysterectomies were weakly associated with race (p=0.073), with whites having about 10% fewer hysterectomies than African Americans and Hispanics. Thirty-three percent of menopausal patients had volunteered information about having a hysterectomy. The percentage of patients who had estrogen replacement therapy (ERT) varied significantly with race (p=0.004). A small percentage of African Americans relative to whites and Hispanics took ERT for the "change of life"; however, nearly 75% of African Americans did not respond to this question.

Q32. "At what age did you start having menstrual periods?"

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Age @ 1st Menstr								
White	393	326	13	(8-19)	13.50	12.84	1.73	0.0423
African American	52	69	13	(8-17)	15.59	12.79	1.99	
Hispanic	32	35	12	(10-15)	10.66	12.03	1.28	
Total	477	430	13	(8-19)	13.66	12.78	1.75	

Q34. "If you answered yes to #33, what year* was your last regular period?" (If Q33=Yes).

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Age @ Last Menstr (n=549)								0.0020
White	387	72	47	(20-66)	16.704	45.842	7.66	
African American	44	7	39.5	(26-69)	22.740	41.432	9.42	
Hispanic	34	5	45.5	(25-57)	20.236	44.471	9.00	
Total	465	84	47	(20-69)	17.72	45.32	8.03	

Q33-34, Derived variable for number of years (If Q33=Yes).

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
No. Yrs Menstr (n=549)								0.0842
White	310	149	35	(7-65)	23.30	33.22	7.74	
African American	29	22	26	(15-54)	33.58	30.00	10.07	
Hispanic	24	15	36	(18-59)	24.56	34.33	8.43	
Total	363	186	34	(7-54)	24.29	33.04	8.02	

*Converted and coded to age prior to data input.

Q33. "Are you menopausal or have you gone through the change of life?"
Q33-34, Related variable (based on volunteered, write-in comments on hysterectomy).
Q33-34, Related variable, had a hysterectomy, (If Q33=Yes).
Q35. "Did you have estrogen replacement therapy or medication for the change of life?" (If Q33=Yes).

	White		African American		Hispanic		Total		
Variable	No.	(%)	No.	(%)	No.	(%)	No.	(%)	$P>X^2$
Menopausal									0.001
Yes	459	(63.84)	51	(42.15)	39	(58.21)	549	(60.53)	
No	68	(9.46)	28	(23.14)	7	(10.45)	103	(11.36)	
Missing	192	(26.70)	42	(34.71)	21	(31.34)	255	(28.11)	
Had a Hysterectomy, All Patients									0.482
Yes	143	(19.89)	22	(18.18)	17	(25.37)	182	(20.07)	
Unknown	576	(80.11)	99	(81.82)	50	(74.63)	725	(79.93)	
Had a Hysterectomy (If Menopausal; n=549)									
	0.073								
Yes	142	(30.94)	22	(43.14)	17	(43.59)	181	(32.97)	
Unknown	317	(69.06)	29	(56.86)	22	(56.41)	368	(67.03)	
Had Estrogen Replacement Therapy (n=549)									0.004
Yes	216	(47.06)	15	(29.41)	16	(41.03)	247	(44.99)	
No	153	(33.33)	14	(27.45)	13	(33.33)	180	(32.79)	
Missing	90	(19.61)	22	(43.14)	10	(25.64)	122	(22.22)	

Birth Control Pills

The percentage of patients who ever took birth control pills differed significantly by race (p=0.001). African Americans had the highest proportion and Hispanics the lowest proportion of such patients. Almost all the patients who ever took birth control pills had quit taking them. The age patients began taking the pill, the age at which they discontinued the pill, and the number of years they took the pill did not differ significantly with race. Analysis on number of years was repeated using a 95-percentile subsample, but results were not significant (p=.1371) (see Appendix 7 for summary tables).

36. "Have you ever taken birth control pills?"
Q38. "Did you quit taking birth control pills?" (If Q36=Yes)

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Taken Birth Control Pills									0.001
Yes	197	(27.40)	36	(29.75)	14	(20.90)	247	(27.23)	
No	189	(26.29)	11	(9.09)	18	(26.87)	218	(24.04)	
Missing	333	(46.31)	74	(61.16)	35	(52.24)	442	(48.73)	
Quit Birth Control Pills (n=247)									0.024*
Yes	191	(96.95)	32	(88.89)	14	(100.00)	237	(95.95)	
No	3	(1.52)	0	(0.00)	0	(0.00)	3	(1.21)	
Missing	3	(1.52)	4	(11.11)	0	(0.00)	7	(2.83)	

Q37. "If yes, about what year* did you begin?" (If Q36=Yes).
Q39. "If yes, about what year*did you quit taking birth control pills?" (If Q36=Yes and Q38=Yes).
Q36-39, Derived variable for number of years.

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Age Began Pill (n=247)								0.280
White	185	12	27	(16-54)	27.52	28.06	7.72	
African American	32	4	20	(15-69)	42.15	24.00	10.12	
Hispanic	13	1	26	(18-37)	25.05	26.23	6.57	
Total	230	17	26	(15-69)	29.68	27.40	8.13	
Age Ended Pill (n=237)								0.4131
White	177	14	32	(19-72)	26.64	33.69	8.98	
African American	30	2	30	(19-70)	31.63	31.37	9.92	
Hispanic	13	1	35	(23-47)	23.00	34.08	7.84	
Total	220	17	32	(19-72)	27.08	33.40	9.04	
No. Yrs Br Ctrl (n=247)								0.5197
White	177	20	4	(1-35)	99.76	6.32	6.30	
African American	30	6	7	(1-24)	77.92	7.30	5.69	
Hispanic	13	1	9	(1-20)	82.19	7.92	6.51	
Total	220	27	5	(1-35)	95.11	6.55	6.23	

*Converted and coded to age prior to data input.

Geographic Region

Some problems should be noted concerning the geographic region data. First, during review and coding of the original surveys, comments written next to Q40 (the geographic region), indicated some patients did not interpret the question correctly and were providing information

about where they had lived after being associated with the military. Second, several patients stated they had always lived in a military family and did not answer the question. Third, the format of Q41 (born, came, left) did not handle the situation of multiple stays in a region. The original surveys were examined for all cases where a patient resided in a given region more than once. Data were adjusted to reflect the longest identifiable time span the patient had provided. When the surveys were coded for data input, both "I was born there" and "I came there" were allowed. However, before calculation of the number of years spent in the specified region, records with this type of dual answer had to be edited to obtain correct calculations.

Results show that for the 85% of patients who answered Q40, about one-third of each racial group resided longest in the West South Central Region. Two grouped versions of the data were derived from geographic regions. When regions were grouped into the United States and non-U.S., the three racial groups differed significantly (p=0.002).

Mean age when patient left the region differed significantly by race. However, mean age when patient came to indicated region and the number of years spent in that region did not differ. Both age when came and number of years had a large upper tail in their distributions. Analysis was repeated for the two variables using 95-percentile subsamples. Results showed there was a highly significant association between age when came and race (p=0.0006). Hispanic mean age (19 years) was more than double that for whites (9 years) or African Americans (7 years). Results for number of years remained nonsignificant (p=0.4129).

Q40. "Where did you live the longest from your birth until you became associated with the military, either as a military spouse or a service member? (Please mark ONE circle.)"

Variable	White No.	White (%)	African American No.	African American (%)	Hispanic No.	Hispanic (%)	Total No.	Total (%)	P>X²
Where Lived Longest, Pre-military									0.001[e]
W. South Central	245	(34.08)	39	(32.23)	24	(35.82)	308	(33.96)	
E. North Central	71	(9.87)	6	(4.96)	2	(2.99)	79	(8.71)	
West Europe	63	(8.76)	0	(0.00)	2	(2.99)	65	(7.17)	
W. North Central	52	(7.23)	2	(1.65)	0	(0.00)	54	(5.95)	
S. Atlantic	52	(7.23)	8	(6.61)	2	(2.99)	62	(6.84)	
Mid Atlantic	45	(6.26)	7	(5.79)	4	(5.97)	56	(6.17)	
E. South Central	32	(4.45)	20	(16.53)	4	(5.97)	56	(6.17)	
Pacific	22	(3.06)	1	(0.83)	2	(2.99)	25	(2.76)	
New England	17	(2.36)	0	(0.00)	0	(0.00)	17	(1.87)	
Mountain	9	(1.25)	0	(0.00)	0	(0.00)	9	(0.99)	
Latin America	4	(0.56)	5	(4.13)	7	(10.45)	16	(1.76)	
Philippines*	3	(0.42)	0	(0.00)	1	(1.49)	4	(0.44)	
Canada	2	(0.28)	0	(0.00)	0	(0.00)	2	(0.22)	
Middle East	2	(0.28)	0	(0.00)	0	(0.00)	2	(0.22)	
West Indies	1	(0.14)	4	(3.31)	1	(1.49)	6	(0.66)	
East Europe	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	
Korea	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	
Other	1	(0.14)	1	(0.83)	3	(4.48)	5	(0.55)	
Africa	0	(0.00)	1	(0.83)	0	(0.00)	1	(0.11)	
Vietnam*		. . .		. . .		. . .		. . .	
Japan*		. . .		. . .		. . .		. . .	
Other SE Asia*		. . .		. . .		. . .		. . .	

*Philippines added from write-in responses; Vietnam, Japan, and Other SE Asia on survey, but not marked by any patient.

Q40, Derived variables, various grouping of where lived regions.
41. Indicate if born, came, left the area.

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Where Lived Longest, (US or Non-US)									0.002
United States	545	(75.80)	83	(68.60)	38	(56.72)	666	(73.43)	
MIssing	96	(13.35)	27	(22.31)	15	(22.39)	138	(15.21)	
Non-US	78	(10.85)	11	(9.09)	14	(20.90)	103	(11.36)	
Where Lived Longest, (US-Only, n=666)									0.004[b]
South Central	277	(50.83)	59	(71.08)	28	(73.68)	364	(54.65)	
North Central	123	(22.57)	8	(9.64)	2	(5.26)	133	(19.97)	
New Engl/Mid Atlantic	62	(11.38)	7	(8.43)	4	(10.53)	73	(10.96)	
S. Atlantic	52	(9.54)	8	(9.64)	2	(5.26)	62	(9.31)	
Mountain/Pacific	31	(5.69)	1	(1.20)	2	(5.26)	34	(5.11)	
I was born there									0.019[b]
Yes	556	(77.33)	85	(70.25)	45	(67.16)	686	(75.63)	
No	163	(22.67)	35	(28.93)	22	(32.84)	220	(24.26)	
Missing	0	(0.00)	1	(0.83)	0	(0.00)	1	(0.11)	
I came there									0.137[b]
Yes	62	(8.62)	9	(7.44)	7	(10.45)	78	(8.60)	
No	657	(91.38)	111	(91.74)	60	(89.55)	828	(91.29)	
Missing	0	(0.00)	1	(0.83)	0	(0.00)	1	(0.11)	
I left there									0.001[b]
Yes	220	(30.60)	23	(19.01)	8	(11.94)	251	(27.67)	
No	499	(69.40)	97	(80.17)	59	(88.06)	655	(72.22)	
Missing	0	(0.00)	1	(0.83)	0	(0.00)	1	(0.11)	

Q41. "What ages were you when you came to the place you marked in item #40, and when you left?" (If came=Yes, If left=Yes, as applicable).
Q41. Derived variable for number of years.

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Age When Came (n=78)								0.0877
White	62	0	7.5	(1-50)	93.04	10.11	9.41	
African American	9	0	6	(2-44)	121.67	11.22	13.65	
Hispanic	7	0	20	(11-30)	36.67	18.86	6.91	
Total	78	0	8	(1-50)	90.46	11.03	9.97	
Age When Left (n=251)								0.0216
White	220	0	21	(1-55)	27.41	22.07	6.05	
African American	23	0	22	(15-62)	45.77	26.17	11.98	
Hispanic	8	0	22.5	(15-33)	25.12	23.50	5.90	
Total	251	0	21	(1-62)	30.51	22.49	6.86	
No. Yrs Where Lived								0.1638
White	613	106	51	(1-98)	49.72	47.07	23.41	
African American	94	27	40.5	(12-82)	40.48	42.37	17.15	
Hispanic	52	15	48.5	(1-74)	39.16	45.85	17.95	
Total	759	148	49	(1-98)	48.30	46.41	22.42	

Socio-Economic Factors

Patients' education varied significantly with race (p=0.012). Hispanics had the least education, whites had the most. More than 35% of Hispanics had no college education, compared to 24% of African Americans and 18% of whites. About 7.5% of Hispanics and 10% of African Americans completed an associate degree or higher, compared to 19% of whites.

Three military status categories varied significantly by race. Married to either active duty military or military retiree or being active duty herself, were all significantly associated with race at the p=0.001 level. More African Americans and Hispanics were married to active duty military, while more whites were married to retired military. The percentage of African Americans who were active duty military themselves, approached twice that of whites and Hispanics combined. A number of patients had commented on being divorced or widowed. Several of these patients made the statements without also indicating whether the spouse had been active duty or retired. All patients who had identified themselves as "widow" were coded as "married to military retiree" in the data set. See Appendix 5 for details on the widows and some additional military status information.

Many of the military rank categories had few or no observations. Grouping ranks into the standard categories of "Junior Enlisted" up through "General Officer" still had too many empty or sparse categories. However, when military ranks were grouped into two categories (enlisted, officer) plus a missing category, a valid Chi-square test was obtained, showing a strong association between rank and race (p=0.001). More than 40% of whites were married to officers or were officers themselves, compared to 10% of African Americans and 12% of Hispanics. It should be noted that the total population of Army officers is 85% white, about 8% African American, and 3% Hispanic.

Q42. "Indicate the number of years of education you have completed. (Please mark ONE circle.)"
Q43. "Are you ... Married to an Active Duty Military Person, Married to a Military Retiree. . ."

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
Years of Education									0.012
HS or less, no GED	51	(7.09)	3	(2.48)	7	(10.45)	61	(6.73)	
HS guaduate or GED	124	(17.25)	19	(15.70)	18	(26.87)	161	(17.75)	
Some college	120	(16.69)	19	(15.70)	9	(13.43)	148	(16.32)	
2-yr associate deg	34	(4.73)	3	(2.48)	2	(2.99)	39	(4.30)	
4-yr college deg	65	(9.04)	4	(3.31)	2	(2.99)	71	(7.83)	
Master's deg /higher	36	(5.01)	4	(3.31)	1	(1.49)	41	(4.52)	
Missing	289	(40.19)	69	(57.02)	28	(41.79)	386	(42.56)	
Military Status (Multiple Answers)									
Mar to AD Mil.	75	(10.43)	30	(24.79)	14	(20.90)	119	(13.12)	0.001
Mar to Mil Retiree	556	(77.33)	61	(50.41)	40	(59.70)	657	(72.44)	0.001
Self, AD Mil.	20	(2.78)	17	(14.05)	4	(5.97)	41	(4.52)	0.001
Self, Retired Mil.	18	(2.50)	5	(4.13)	1	(1.49)	24	(2.65)	0.487[b]
Other	30	(4.17)	6	(4.96)	5	(7.46)	41	(4.52)	0.449

Q43. Derived variable, the number of military status' marked.

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
									0.888[c]
No. of Mil. Status's Given									
0	26	(3.62)	3	(2.48)	3	(4.48)	32	(3.53)	
1	687	(95.55)	117	(96.69)	64	(95.52)	868	(95.70)	
2*	6	(0.83)	1	(0.83)	0	(0.00)	7	(0.77)	

*Most of the patients with two responses for status were military married to military. The others had one of the married or self categories marked plus "other" status ( ).

Q43. Explanation of "Other" Status

Write-in Answer	ETHN	#	Write-in Answer	ETHN	#	Write-in Answer	ETHN	#
A RES	Afr Am	1	DEP MOM	Afr Am	1	FOREIGN VIP	Hispanic	1
A RES SELF	White	1	DIV	White	14	PDRL	White	1
AD DEP	White	1	DIV	Afr Am	1	RET DEP INL	White	2
AD DEP	Afr Am	2	DIV	Hispanic	2	RET DIV	White	1
AD DEP	Hispanic	1	DSAB AD CHD	White	1	SPONS DEP	Afr Am	1
AD DEP INL	White	1	EX-MIL SELF	White	1	D/URFS	Hispanic	1
AD DEP INL	Hispanic	1	EX-MIL(94	White	1	URSF	White	2
AD DEP MOM	White	2	EXP MIL DEP	White	1			

Q44. "What is your military rank or your sponsor's military rank?"

Variable	White No.	(%)	African American No.	(%)	Hispanic No.	(%)	Total No.	(%)	P>X²
									0.001[e]
Patient/Sponsor's Rank									
E3	0	(0.00)	1	(0.83)	1	(1.49)	2	(0.22)	
E4	6	(0.83)	8	(6.61)	3	(4.48)	17	(1.87)	
E5	27	(3.76)	11	(9.09)	5	(7.46)	43	(4.74)	
E6	73	(10.15)	29	(23.97)	16	(23.88)	118	(13.01)	
E7	124	(17.25)	39	(32.23)	16	(23.88)	179	(19.74)	
E8	80	(11.13)	10	(8.26)	7	(10.45)	97	(10.69)	
E9	48	(6.68)	3	(2.48)	5	(7.46)	56	(6.17)	
W2	5	(0.70)	0	(0.00)	0	(0.00)	5	(0.55)	
W3	13	(1.81)	0	(0.00)	1	(1.49)	14	(1.54)	
W4	12	(1.67)	0	(0.00)	0	(0.00)	12	(1.32)	
O01	3	(0.42)	0	(0.00)	0	(0.00)	3	(0.33)	
O02	2	(0.28)	1	(0.83)	1	(1.49)	4	(0.44)	
O03	21	(2.92)	2	(1.65)	1	(1.49)	24	(2.65)	
O04	64	(8.90)	4	(3.31)	3	(4.48)	71	(7.83)	
O05	114	(15.86)	4	(3.31)	2	(2.99)	120	(13.23)	
O06	73	(10.15)	1	(0.83)	0	(0.00)	74	(8.16)	
O07	3	(0.42)	0	(0.00)	0	(0.00)	3	(0.33)	
O08	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	
O09	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	
MSG	3	(0.42)	0	(0.00)	0	(0.00)	3	(0.33)	
AF	1	(0.14)	0	(0.00)	0	(0.00)	1	(0.11)	
Missing	45	(6.26)	8	(6.61)	6	(8.96)	59	(6.50)	

Q44. Derived groupings of military rank.

Variable	White No.	White (%)	African American No.	African American (%)	Hispanic No.	Hispanic (%)	Total No.	Total (%)	$P>X^2$
Patient/Sponsor's Rank									0.001[c]
Junior Enlisted	6	(6.40)	9	(7.44)	4	(5.97)	19	(2.09)	
NCO	100	(13.91)	40	(33.06)	21	(31.34)	161	(17.75)	
Senior NCO	255	(35.47)	52	(42.98)	28	(41.79)	335	(36.93)	
Warrant Officer	30	(4.17)	0	(0.00)	1	(1.49)	31	(3.42)	
Company Grade	26	(3.62)	3	(2.48)	2	(2.99)	31	(3.42)	
Field Grade	251	(34.91)	9	(7.44)	5	(7.46)	265	(29.22)	
General Officer	5	(0.70)	0	(0.00)	0	(0.00)	5	(0.55)	
Missing	46	(6.40)	8	(6.61)	6	(8.96)	60	(6.62)	
Patient/Sponsor's Rank									0.001
Enlisted/NCO	361	(50.21)	101	(83.47)	53	(79.10)	515	(56.78)	
Warrant Offcr/Officer	312	(43.39)	12	(9.92)	8	(11.94)	332	(36.60)	
Missing	46	(6.40)	8	(6.61)	6	(8.96)	60	(6.62)	

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APPENDIX 1

BREAST CANCER PATIENT SURVEY

AND

COVER LETTER

DEPARTMENT OF THE ARMY
ACADEMY OF HEALTH SCIENCES, UNITED STATES ARMY
FORT SAM HOUSTON, TEXAS 78234-6100

REPLY TO
ATTENTION OF

Analysis Branch

Dear Madam,

We are conducting a survey of military women and military family members who have been diagnosed with breast cancer. This research is a continuation of previous work in which we are trying to understand what makes women vulnerable to breast cancer. Indications are that many different factors—environment, giving birth, breast feeding, smoking, drinking alcohol, exercising, getting mammograms, type of treatment, and having close relatives with breast cancer—could all have an effect. We would like to determine which of these factors are more important. We are hoping to put together information that will help patients as well as health care providers understand breast cancer and what their choices are for treatment and management of the disease.

Please take a few minutes to fill out this questionnaire. The information that we receive from you and other women with breast cancer may make a difference in how patients are diagnosed and treated.

We appreciate your participation in this study. All data and medical information obtained about you as an individual is considered privileged and held in confidence. Your participation in this study will not affect the care you receive at Brooke Army Medical Center. Your name and identifying information will be separated from the questionnaire, and your answers will be pooled with the answers of other breast cancer patients. The information will describe everyone in the group who responded to the survey, rather than any one individual.

If you have any questions about this study, please feel free to contact Mrs. Ruth Byers at (210)221-9333, extension 9631.

Sincerely,

Martha Spinks

Martha K. Spinks
Lieutenant Colonel, U.S. Army
Center for Healthcare Education & Studies
Army Medical Department Center and
School
Fort Sam Houston, Texas 78234-6124

Breast Cancer Study

Sponsored by:

Brooke Army Medical Center

&

The Center for Healthcare Education and Studies, Army Medical Department Center and School

Fort Sam Houston, Texas

Survey of Department of Defense Breast Cancer Patients

Statement of Confidentiality. All data and medical information obtained about you as an individual will be considered privileged and held in confidence: you will not be identified in any presentation of the results. Complete confidentiality cannot be promised. particularly to subjects who are military personnel. because information bearing on your health may be required to be reported to appropriate medical or command authorities. Representatives from the U.S. Army Medical Research and Materiel Command (and. where applicable. the Food and Drug Administration. and the U.S. Army Medical Department Center and School) may inspect the records of the research in their duty to protect human subjects in research. Completing this survey will not affect your ability to receive health care.

1. Name (Last. First. MI)_____

2. Sponsor's SSN ◯◯◯-◯◯-◯◯◯◯

3. A mammogram is a special x-ray of the breast to look for breast cancer. Have you ever had a mammogram?
◯ Yes ◯ No(go to # 6) ◯ Don't know (go to # 6)

4. At about what age did you have your first mammogram?_____

5. How often have you usually had mammograms?
◯ Every year ◯ Every other year ◯ At irregular intervals. more than 2 years apart.

6. How was the cancer in your breast **first** discovered?
◯ By a routine mammogram or x-ray ◯ The doctor felt it during a routine exam
◯ I felt it ◯ Other(please explain)_____

7. After the cancer was first discovered. how much time passed until tests were done and a doctor said you definitely had cancer? (Please write a number in ONE of the blanks.)
_____Days _____Weeks _____Months _____Years

8. After the cancer was discovered. was there a delay in seeing a doctor?
◯ Yes ◯ No (skip to question #10)

9. What was the reason for your delay in seeing a doctor?
◯ No one told me to see a doctor at first.
◯ There was no appointment available sooner.
◯ The appointment clerk I talked to didn't understand what I needed.
◯ I didn't think it was anything to be concerned about.
◯ I was afraid of bad news.
◯ I don't like to go to doctors.
◯ I didn't expect to get help by going to a doctor.
◯ Other (please explain)_____

10. Did you have surgery? ◯ Yes ◯ No
If you answered YES, what type of surgery did you have?_____

11. What other treatment did you receive from your doctor (check one)?
◯ Chemotherapy ◯ Radiotherapy ◯ Other _____
(please describe)

12. Do you have any other primary cancers? ◯ Yes ◯ No (skip to # 14)

13. Additional primary cancer:
◯ Colon ◯ Skin ◯ Kidney ◯ Lung ◯ Cervical/Uterine
◯ Bladder ◯ Ovary ◯ Pancreas ◯ Brain ◯ Others

14. Have any of your close relatives had **breast cancer** ? (You may mark more than answer.)
◯ None ◯ My Mother ◯ My Mother's Mother ◯ My Mother's Sister
◯ My Daughter ◯ My Sister ◯ My Father's Mother ◯ My Father's Sister
◯ My Son ◯ My Brother ◯ My Mother's Father ◯ My Mother's Brother
◯ My Father's Father ◯ My Father's Brother

15. Do you have children? ◯ Yes ◯ No (skip to # 19)

16. How many children do you have? _____
(If all your children are adopted, skip to #19.)

17. How old were you when you had your first baby?_____

18. Did you breast-feed your babies?
◯ No ◯ Yes, the first ◯ Yes, all ◯ Yes, more than one, but not all

19. What is your height in feet and inches?_____Feet _____Inches

20. What is your weight in pounds?_____

21. Do you smoke? ◯ Yes ◯ Yes, previously, but no longer ◯ No (skip to # 28)

22. How many years have you smoked? _____

23. How many cigarettes do (did) you smoke on an average day?_____

24. Do you drink alcohol? ◯ Yes ◯ Yes, previously, but no longer ◯ No (skip to # 28)

25. A drink is 1 can or bottle of beer, 1 glass of wine, 1 can or 1 bottle of wine cooler, 1 cocktail, or 1 shot of liquor. How many drinks do (did) you drink on average?
◯ Less than 1 drink a day ◯ 1-2 drinks a day ◯ More than 3 drinks a day

26. How old were you when you started to drink?_____

27. How old were you when you stopped drinking?_____

28 . How often do you eat foods high in saturated fats such as beef. hamburger. pork. sausage. butter. whole milk. cheese?
◯ At every meal ◯ Daily ◯ 3-5 days a week
◯ Less than 3 days a week ◯ Never

29. How often do you eat foods high in salt or sodium such as cold cuts. bacon. canned soups. potato chips. etc.?
◯ At every meal ◯ Daily ◯ 3-5 days a week
◯ Less than 3 days a week ◯ Never

30. How often do you eat high fiber foods such as whole grain breads. cereals. bran. raw fruit. or raw vegetables?
◯ At every meal ◯ Daily ◯ 3-5 days a week
◯ Less than 3 days a week ◯ Never

31. How often do you do at least 20 minutes of non-stop physical activity (aerobics. running. fast walking. biking. swimming. dancing. etc...)?
◯ 3 or more times a week ◯ 1-2 times a week ◯ Never

32. At about what age did you start having menstrual periods?_____

33. Are you menopausal or have you gone through the change of life?
◯ Yes ◯ No (skip to # 36)

34. If you answered yes to #33. what year was your last regular period?_____

35. Did you have estrogen replacement therapy or medication for the change of life?
◯ Yes ◯ No

36. Have you ever taken birth control pills?
◯ Yes ◯ No (skip to # 40)

37. If yes. about what year did you begin?_____

38. Did you quit taking birth control pills? ◯ Yes ◯ No (skip to # 40)

39. If yes. about what year did you quit taking birth control pills?_____

40. Where did you live the longest from your birth until you became associated with the military, either as a military spouse or a service member? (Please mark ONE circle.)

◯ New England (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut)
◯ Middle Atlantic (New York, New Jersey, Pennsylvania)
◯ East North Central (Michigan, Wisconsin, Ohio, Indiana, Illinois)
◯ West North Central (Minnesota, North Dakota, South Dakota, Iowa, Nebraska, Missouri, Kansas)
◯ West South Central (Arkansas, Oklahoma, Louisiana, Texas)
◯ East South Central (Kentucky, Tennessee, Alabama, Mississippi)
◯ South Atlantic (Delaware, Maryland, District of Columbia, West Virginia, Virginia, North Carolina, South Carolina, Georgia, Florida)
◯ Mountain (Montana, Idaho, Wyoming, Colorado, Utah, Nevada, New Mexico, Arizona
◯ Pacific (Washington, Oregon, California, Alaska, Hawaii)

◯ Latin America	◯ Western Europe	◯ Eastern Europe
◯ Korea	◯ Vietnam	◯ Japan
◯ Middle East	◯ Africa	◯ Other (please list)

41. What ages were you when you came to the place you marked in item #40, and when you left?

◯ I was born there.
◯ I came there at the age of_____.
◯ I left there at the age of_____.

42. Indicate the number of years of education you have completed. (Please mark ONE circle.)

◯ Some high school or less, no GED	◯ High school graduate or GED
◯ Some college	◯ Two year associate's degree
◯ Four year college degree	◯ Master's degree or higher

43. Are you...

◯ Married to an Active Duty Military Person	◯ Active Duty Military Yourself
◯ Married to a Military Retiree	◯ Retired from the Military Yourself

◯ Other (please explain)_____.

44. What is your military rank or your sponsor's military rank?_____

45. If there is anything else that you think would be helpful for a cancer researcher to know, please write about it on the lines below.

Write your additional comments or questions here.

Thank you for your cooperation in filling out this survey. If you have questions about this survey, please call Mrs. Ruth Byers at 221-9333, extension 9631. If you receive a recording saying that Mrs. Byers is out, please leave your name and phone number and she will call you back as soon as possible.

APPENDIX 2

FILE LAYOUT AND DATA CODING
RETURNED BY DATA INPUT CONTRACT

AccuData Services, Inc.					
Record Layout					
for					
Ft. Sam Houston					
Center for Healthcare Ed & Studies					
Survey of DOD Breast Cancer Patients					
7/06/98					
FIELD	**CHARACTER**	**POSITION**			**VALID**
ID	**COUNT**	**START**	:	**END**	**RESPONSE**
ID #	03	001	:	003	as assigned
Q1 Last Name	20	004	:	023	
Q1 First Name	10	024	:	033	
Q1 MI	01	034	:	034	
Q2 SSN	09	035	:	043	
Q3	01	044	:	044	1=yes
					2=no
					3=don't know
Q4	02	045	:	046	
Q5	01	047	:	047	1=every year
					2=every other year
					3=at irregular intervals
					4=none if written in
Q6					
By a routine mam or x-ray	01	048	:	048	for Q6: 0=blank 1=checked
I felt it	01	049	:	049	
The doctor felt it	01	050	:	050	
Other	01	051	:	051	
Q6 Other explained	15	052	:	066	text
Q7	03	067	:	069	##D, ##W, ##M, ##Y
					for a check mark used blank for #
Q8	01	070	:	070	1=yes 2=no
Q9					
No one told me..	01	071	:	071	for Q9: 0=blank 1=checked
There was no appt. available	01	072	:	072	
The appt cleck did not underst.	01	073	:	073	
I didn't think to be concerned	01	074	:	074	
I was afraid of bad knews	01	075	:	075	
I don't like to go to Dr	01	076	:	076	
I didn't expect help from Dr	01	077	:	077	
Other	01	078	:	078	
Q9 Other explained	15	079	:	093	text
Q10	01	094	:	094	1=yes 2=no
Q10 code	02	095	:	096	marked code
Q11	01	097	:	097	1=chemotherapy
					2=radiotherapy
					3=Other
					4=none if written in
Q11 code	01	098	:	098	marked code
Q12	01	099	:	099	1=yes 2=no
Q13					
Colon	01	100	:	100	for Q13: 0=blank 1=checked

Bladder	01	101	101	
Skin	01	102	102	
Ovary	01	103	103	
Kidney	01	104	104	
Pancreas	01	105	105	
Lung	01	106	106	
Brain	01	107	107	
Cervical/Uterine	01	108	108	
Others	01	109	109	
Breast	01	110	110	
Bone	01	111	111	
Q14				
None	01	112	112	for Q14: 0=blank 1=checked
My daughter	01	113	113	
My son	01	114	114	
My mother	01	115	115	
My sister	01	116	116	
My brother	01	117	117	
My mother's mother	01	118	118	
My father's mother	01	119	119	
My mother's father	01	120	120	
My father's father	01	121	121	
My mother's sister	01	122	122	
My father's sister	01	123	123	
My mother's brother	01	124	124	
My father's brother	01	125	125	
Q15	01	126	126	1=yes 2=no
Q16	02	127	128	
Q17	02	129	130	
Q18	01	131	131	1=No 2=Yes, the first
				3=Yes, all 4=Yes, more than one
Q19ht	01	132	132	
Q19in	02	133	134	
Q20	03	135	137	
Q21	01	138	138	1=yes 2=yes, prev 3=no
Q22	02	139	140	
Q23	03	141	143	
Q24	01	144	144	1=yes 2=yes, prev 3=no
Q25	01	145	145	1=less than 1
				2=1-2 drinks a day
				3=more than 3 drinks
Q26	02	146	147	
Q27	02	148	149	
Q28	01	150	150	1=at every meal
				2=daily
				3=3-5 days a week
				4=less than 3 days/wk
				5=never
Q29	01	151	151	1=at every meal
				2=daily
				3=3-5 days a week

			4=less than 3 days/wk
			5=never
Q30	01	152 : 152	1=at every meal
			2=daily
			3=3-5 days a week
			4=less than 3 days/wk
			5=never
Q31	01	153 : 153	1=3 or more times/wk
			2=1-2 times/wk
			3=never
Q32	02	154 : 155	
Q33	01	156 : 156	1=yes 2=no
Q34	02	157 : 158	year assume 19##
Q35	01	159 : 159	1=yes 2=no
Q36	01	160 : 160	1=yes 2=no
Q37	02	161 : 162	age
Q38	01	163 : 163	1=yes 2=no
Q39	02	164 : 165	age
Q40	02	166 : 167	01=New England
			02=Mid Atlantic
			03=East North Central
			04=West North Central
			05=West South Central
			06=East South Central
			07=South Atlantic
			08=Mountain
			09=Pacific
			10=Latin America
			11=Korea
			12=Middle East
			13=Western Europe
			14=Vietnam
			15=Afric
			16=Eastern Europe
			17=Japan
			18=Other
Q41			
I was born there	01	168 : 168	0=blank 1=checked
I came there	01	169 : 169	0=blank 1=checked
I came there age	02	170 : 171	written in
I left there	01	172 : 172	0=blank 1=checked
I left there age	02	173 : 174	writtern in
Q42	01	175 : 175	1=some HS
			2=Some college
			3=4 yr college
			4=HS grad or GED
			5= 2yr assoc. degree
			6=Masters or higher
Q43			
Married to Active Duty Mil Per	01	176 : 176	for Q43: 0=blank 1=checked
Married to Mil Retiree	01	177 : 177	

Other	01	178	:	178	
Active Duty Mil Yourself	01	179	:	179	
Retired Mil Yourself	01	180	:	180	
Q43 Other explained	15	181	:	195	text
Q44	03	196	:	198	RANK

APPENDIX 3

ALPHABETIC LIST OF VARIABLES
IN
THE BREAST CANCER PATIENT SURVEY
SAS DATA SET

Appendix 3. Alphabetic List of Variables in the Breast Cancer Patient Survey SAS Data Set*

Variable	#	Type	Len	Pos	Format	Label	Related Survey Question(s)†
ACTIVE	65	Num	8	514	ACTIVFMT.	20 Min Phy Activ	Q31
ADDTRTMT	91	Num	8	721	TRTMTFMT.	Addtl Treatment	Q11
AGE1CH	52	Num	8	410		Age @ 1st Child	Q17
AGE1M	4	Num	8	19		Age @ 1st Mammgm	Q4
AGEDEATH	96	Num	8	761		Age @ Death	
AGELAST	68	Num	8	538		Age @ Last Menst	Q34
AGEMENS	66	Num	8	522		Age @ 1st Menst	Q32
AGESRVY	97	Num	8	769		Age @ Survey	
AGE_BBCP	71	Num	8	562		Age Began Pill	Q37
AGE_EBCP	73	Num	8	578		Age Ended Pill	Q39
AREL_GRP	107	Num	8	849	ARELGRPF.	Relat. Levels	Q14†
BCNTLP	70	Num	8	554	YNFMT.	Birth Ctrl Pills	Q36
BCP_YRS	100	Num	8	793		# Yrs Br Ctrl	Q37,39†
BM	127	Num	8	1009		Bn Mar Trpl/Hvst	Q11†
BMI	102	Num	8	809		Body Mass Index	Q19,20†
BRSFEED	53	Num	8	418	BRFEEDFM.	Breast Fed Chldr	Q18
BX	116	Num	8	921		Biopsy	Q10†
CA_BLADD	25	Num	8	194		Bladder	Q13
CA_BONE	35	Num	8	274		Bone	Q13
CA_BRAIN	31	Num	8	242		Brain	Q13
CA_BRST	34	Num	8	266		Breast	Q13
CA_CER_U	32	Num	8	250		Cervix/Uterus	Q13
CA_COLON	24	Num	8	186		Colon	Q13
CA_CT	110	Num	8	873		# Othr Cancers	Q13†
CA_KIDNE	28	Num	8	218		Kidney	Q13
CA_LUNG	30	Num	8	234		Lung	Q13
CA_OTHRS	33	Num	8	258		Other Sites	Q13
CA_OVARY	27	Num	8	210		Ovary	Q13
CA_PANCR	29	Num	8	226		Pancreas	Q13
CA_SKIN	26	Num	8	202		Skin	Q13
CHLDR	50	Num	8	394	YNFMT.	Had Children	Q15
CT	124	Num	8	985		Chemotherapy	Q11†
DAYSDX	90	Num	8	713		Days til DX Conf	Q7
DEAD	89	Num	8	705		Deceased	
DELAY	12	Num	8	83	YNFMT.	Delay Seeing Dr	Q8
DELAY_R1	13	Num	8	91		Not Told See Dr	Q9
DELAY_R2	14	Num	8	99		First Avail Appt	Q9
DELAY_R3	15	Num	8	107		Appt Clerk Misun	Q9
DELAY_R4	16	Num	8	115		Not Concerned	Q9
DELAY_R5	17	Num	8	123		Afraid Bad News	Q9
DELAY_R6	18	Num	8	131		Not Like Vst Dr	Q9
DELAY_R7	19	Num	8	139		Not Expect Help	Q9
DELAY_R8	20	Num	8	147		Other Reason	Q9
DK_BAGE	60	Num	8	474		Age Began Drink	Q26
DK_EAGE	61	Num	8	482		Age Ended Drink	Q27
DK_YRS	98	Num	8	777		# Yrs Drank	Q26,27†
DLY_CT	109	Num	8	865		# Reasons delay	Q9†
DOB	93	Num	8	737	DATE9.	DATE OF BIRTH	
DOD	94	Num	8	745	DATE9.	Date of Death	
DRINK	58	Num	8	458	YPNFMT.	Drink Alcohol	Q24
D_OTH	21	Char	15	155		Oth Delay Descrp	Q9

*First 7 columns produced by The SAS System Proc CONTENTS (March 20, 2000)
†Blank means variable is not direct answer to survey question and not derived from survey answer; i.e., was added from ACTUR or from volunteered patient comments.
‡Derived variable, based on original survey variable(s).

Appendix 3. Alphabetic List of Variables in the Breast Cancer Patient Survey SAS Data Set* (cont.)

Variable	#	Type	Len	Pos	Format	Label	Related Survey Question(s)
END_BCP	72	Num	8	570	YNFMT.	Quit the Pill	Q38
ERT	69	Num	8	546	YNFMT.	Estrogen Rpl Rx	Q35
ETHN	95	Num	8	753	RACEN.	Race	n/a
FIBER	64	Num	8	506	EATINGFM.	High in Fiber	Q30
HT	92	Num	8	729		Pt Ht (in)	Q19
HYST	88	Num	8	697	HYSTFMT.	Hysterectomy	
LUM	115	Num	8	913		Lumpectomy	Q10†
MENOP	67	Num	8	530	YNFMT.	Menopausal	Q33
MENS_YRS	99	Num	8	785		# Yrs Menstr	Q31,33‡
MFREQ	5	Num	8	27	MGMFQFMT.	Freq of Mammogms	Q5
MGM	3	Num	8	11	YNUFMT.	Ever Had Mammogm	Q3
MILGRP1	132	Num	8	1049	MILGP1FM.	Mil.Rank Groups	Q44‡
MILGRP2	133	Num	8	1057	MILGP2FM.	Mil. Ranks	Q44‡
MILRANK	87	Char	3	694		Sponsor's Rank	Q44
MRM	114	Num	8	905		Mastectomy	Q10‡
NQ6_HCP	122	Num	8	969		Dr/Hlthcare Prov	Q6‡
NQ6_MGM	120	Num	8	953		Mammogram	Q6‡
NQ6_PTH	121	Num	8	961		Patient/Husband	Q6‡
NQ6_SEC	123	Num	8	977		2nd.to Oth Rx/Dx	Q6‡
NRCIG	57	Num	8	450		# Cig's/Day	Q23
NRDRNK	59	Num	8	466	DRINKFMT.	# Drinks/Day	Q25
NR_CHLDR	51	Num	8	402		# Children	Q16
OTHRCNCR	2	Num	8	3	YNFMT.	Oth Primary CA	Q12
OTHTRT	128	Num	8	1017		Other Trtmt	Q11‡
Q6_CT	108	Num	8	857		# Ways 1st fd CA	Q6‡
Q6_DRFLT	8	Num	8	51		Dr Felt It	Q6
Q6_FILIN	10	Char	15	67		Other Explained	Q6
Q6_IFELT	7	Num	8	43		I Felt It	Q6
Q6_OTHOW	119	Num	8	945	Q6_OTHFM.	Oth How Fd	Q6‡
Q6_OTHR	9	Num	8	59		Fd Other	Q6
Q6_RMGM	6	Num	8	35		Routine Mammogm	Q6
REC	117	Num	8	929		Reconstruction	Q10‡
REL_AUNT	105	Num	8	833		Aunt	Q14
REL_BRCR	134	Num	8	1065	YNFMT.	Relatives w/BrCA	Q14‡
REL_BRO	41	Num	8	322		Brother	Q14
REL_CT	111	Num	8	881		# Rels w/ Br CA	Q14‡
REL_CTGP	135	Num	8	1073	RELCTGFM.	#Rels w/BrCA v2	Q14‡
REL_DAU	37	Num	8	290		Daughter	Q14
REL_GRMO	104	Num	8	825		Grandmother	Q14
REL_GRP	106	Num	8	841	RELGRPFM.	Relative Grps	Q14‡
REL_MOTH	39	Num	8	306		Mother	Q14
REL_M_AU	46	Num	8	362		Maternal Aunt	Q14
REL_M_GF	44	Num	8	346		Matl.Grdfather	Q14
REL_M_GM	42	Num	8	330		Matl.Grdmother	Q14
REL_M_UN	48	Num	8	378		Maternal Uncle	Q14
REL_NONE	36	Num	8	282		None	Q14
REL_P_AU	47	Num	8	370		Paternal Aunt	Q14
REL_P_GF	45	Num	8	354		Patl.Grdfather	Q14
REL_P_GM	43	Num	8	338		Patl.Grdmother	Q14
REL_P_UN	49	Num	8	386		Paternal Uncle	Q14
REL_SIS	40	Num	8	314		Sister	Q14

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‡Derived variable, based on original survey variable(s).

Appendix 3. Alphabetic List of Variables in the Breast Cancer Patient Survey SAS Data Set* (cont.)

Variable	#	Type	Len	Pos	Format	Label	Related Survey Question(s)
REL_SON	38	Num	8	298		Son	Q14
REL_UNKN	103	Num	8	817		Unspec.Relatv	Q14
RT	125	Num	8	993		Radiotherapy	Q11‡
SALT	63	Num	8	498	EATINGFM.	High in Salt	Q29
SATFAT	62	Num	8	490	EATINGFM.	High Sat.Fats	Q28
SID	1	Char	3	0		Survey ID #	
SMOKE	55	Num	8	434	YPNFMT.	Smoker	Q21
SRG_GRP	118	Num	8	937	SRGGRPFM.	Surg. Group	Q10‡
STAT_CT	112	Num	8	889		# Mil Status's	Q43‡
STAT_OTH	86	Char	12	682		Other Explained	Q43
SURG	22	Num	8	170	YNFMT.	Had Surgery	Q10
SVYGRP	129	Num	8	1025	SVYGRPFM.	Survey Group	
SV_BRLOC	113	Num	8	897	BRLOCFMT.	Brst CA Locat	Q10‡
S_MAR_AD	81	Num	8	642		Marr to AD	Q43
S_MAR_RT	82	Num	8	650		Marr to Ret	Q43
S_OTHER	83	Num	8	658		Other Status	Q43
S_SLF_AD	84	Num	8	666		Self, Actv Duty	Q43
S_SLF_RT	85	Num	8	674		Self, Retired	Q43
TAM	126	Num	8	1001		Tamoxifen	Q11‡
TTYPE	11	Char	1	82		D/Wk/Mo/Yr Delay	Q7
TYPE_SRG	23	Num	8	178	SURGFMT.	Type Surgery	Q10
WH_BORN	75	Num	8	594		Born There	Q41
WH_CAGE	77	Num	8	610		Age When Came	Q41
WH_CAME	76	Num	8	602		Came There	Q41
WH_LAGE	79	Num	8	626		Age When Left	Q41
WH_LEFT	78	Num	8	618		Left There	Q41
WH_LIVED	74	Num	8	586	LOCATNFM.	Where Longest	Q40
WH_LVGRP	131	Num	8	1041	LVGRPFMT.	U.S. vs. Other	Q40‡
WH_USGRP	130	Num	8	1033	USGRPFMT.	U.S. Regions Only	Q40‡
WH_YRS	101	Num	8	801		# Yrs Where Liv	Q41‡
WT	54	Num	8	426		Pt Wt (lbs)	Q20
YRS_EDU	80	Num	8	634	EDUCFMT.	Educ Level	Q42
YRS_SMK	56	Num	8	442		# Yrs Smoked	Q22

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APPENDIX 4

SAS FORMATS
WHICH DEFINE NUMERIC VALUES
OF CATEGORICAL VARIALBLES

FORMAT NAME: ACTIVFMT LENGTH: 11 NUMBER OF VALUES: 4

START	END	LABEL (VER. 6.11 01DEC99:16:30:00)
.	.	Missing
1	1	3+ x's/wk
2	2	1-2 x's/wk
3	3	Never

FORMAT NAME: ARELGRPF LENGTH: 12 NUMBER OF VALUES: 4

START	END	LABEL (VER. 6.11 28FEB00:15:02:34)
0	0	None
1	1	Immed.Family
2	2	Grandparent
3	3	Aunt/Uncle

FORMAT NAME: BRFEEDFM LENGTH: 7 NUMBER OF VALUES: 5

START	END	LABEL (VER. 6.11 01DEC99:16:30:00)
.	.	Missing
1	1	No
2	2	Yes,one
3	3	Yes,all
4	4	Yes,>1

FORMAT NAME: BRLOCFMT LENGTH: 5 NUMBER OF VALUES: 4

START	END	LABEL (VER. 6.11 09APR99:10:59:30)
1	1	right
2	2	left
3	3	bilat
9	9	unkwn

FORMAT NAME: DRINKFMT LENGTH: 7 NUMBER OF VALUES: 4

START	END	LABEL (VER. 6.11 01DEC99:16:30:00)
.	.	Missing
1	1	<1
2	2	1-2
3	3	>3

FORMAT NAME: EATINGFM LENGTH: 11 NUMBER OF VALUES: 6

START	END	LABEL (VER. 6.11 01DEC99:16:30:00)
.	.	Missing
1	1	Every meal
2	2	Daily
3	3	3-5 days/wk
4	4	<3 days/wk
5	5	Never

FORMAT NAME: EDUCFMT LENGTH: 19 NUMBER OF VALUES: 7

START	END	LABEL (VER. 6.11 01DEC99:16:30:01)
.	.	Missing
1	1	Some HS/less,no GED
2	2	Some college
3	3	4-yr college degree
4	4	HS graduate or GED
5	5	2-yr Associate degr
6	6	Masters degr/higher

FORMAT NAME: HYSTFMT LENGTH: 3 NUMBER OF VALUES: 2

START	END	LABEL (VER. 6.11 01DEC99:16:30:01)
.	.	Unk
1	1	Yes

FORMAT NAME: LOCATNFM LENGTH: 12 NUMBER OF VALUES: 23

START	END	LABEL (VER. 6.11 01DEC99:16:30:01)
.	.	Missing
1	1	New England
2	2	Mid Atlantic
3	3	E No Central
4	4	W No Central
5	5	W So Central
6	6	E So Central
7	7	S Atlantic
8	8	Mountain
9	9	Pacific
10	10	Latin Amer
11	11	Korea
12	12	Middle East
13	13	West Europe
14	14	Vietnam
15	15	Africa
16	16	East Europe
17	17	Japan
18	18	Other
19	19	Philippines
20	20	Othr SE Asia
21	21	West Indies
22	22	Canada

FORMAT NAME: LVGRPFMT LENGTH: 13 NUMBER OF VALUES: 3

START	END	LABEL (VER. 6.11 15MAR00:16:06:36)
.	.	Missing
1	1	United States
2	2	Non-U.S.

FORMAT NAME: MGMFQFMT LENGTH: 13 NUMBER OF VALUES: 5

START	END	LABEL (VER. 6.11 01DEC99:16:30:00)
	.	.|Missing
	1	1|Every yr
	2	2|Every othr yr
	3	3|Irreg, >2 yrs
	4	4|None

FORMAT NAME: MILGP1FM LENGTH: 15 NUMBER OF VALUES: 8

START	END	LABEL (VER. 6.11 15MAR00:16:06:36)
	.	.|Missing
	1	1|Junior Enlisted
	2	2|NCO
	3	3|Senior NCO
	4	4|Warrant Officer
	5	5|Company Grade
	6	6|Field Grade
	7	7|General Officer

FORMAT NAME: MILGP2FM LENGTH: 14 NUMBER OF VALUES: 3

START	END	LABEL (VER. 6.11 15MAR00:16:06:36)
	.	.|Missing
	1	1|Enlisted/NCO
	2	2|Warr.Ofcr/Ofcr

FORMAT NAME: Q6_QTHFM LENGTH: 14 NUMBER OF VALUES: 6

START	END	LABEL (VER. 6.11 28FEB00:15:02:34)
	1	1|Brst/Nip Disch
	2	2|Brst Abnor/Dif
	3	3|Brst/Side Pain
	4	4|Fd by Husb/NP
	5	5|Fd w/Oth Dx/Rx
	6	6|Other

FORMAT NAME: RACEN LENGTH: 8 NUMBER OF VALUES: 3

START	END	LABEL (VER. 6.11 08DEC99:14:48:18)
1	1	White
2	2	Hispanic
3	3	Black

FORMAT NAME: RELCTGFM LENGTH: 7 NUMBER OF VALUES: 5

START	END	LABEL (VER. 6.11 04APR00:18:26:32)
.	.	Missing
0	0	0
1	1	1
2	2	2
3	3	3 to 5

FORMAT NAME: RELGRPFM LENGTH: 15 NUMBER OF VALUES: 5

START	END	LABEL (VER. 6.11 28FEB00:15:02:34)
0	0	None
1	1	Immed.Family
2	2	Maternal Relatv
3	3	Paternal Relatv
4	4	Unkn,Non-Immed.

FORMAT NAME: SRGGRPFM LENGTH: 11 NUMBER OF VALUES: 4

START	END	LABEL (VER. 6.11 28FEB00:15:02:34)
1	1	MRM
2	2	LUM at Most
3	3	BX at Most
4	4	Other Srg

FORMAT NAME: SURGFMT LENGTH: 15 NUMBER OF VALUES: 21

START	END	LABEL (VER. 6.11 28FEB00:15:02:34)
.	.	Missing
1	1	MRM
2	2	MRM-L
3	3	MRM-R
4	4	MRM-Bi
5	5	LUM
6	6	LUM-R
7	7	LUM-L
8	8	MRM+Rec
9	9	Bx
10	10	MRM+LUM
11	11	MRM-L+LUM-R
12	12	MRM-Bi+Rec
13	13	MRM-L+Rec
14	14	Other surg
15	15	LUM-Bi
16	16	Bx-R
17	17	Bx-L
18	18	MRM-L+Rec
19	19	MRM-L+LUM-R+Rec
20	20	MRM-R+LUM-L

FORMAT NAME: SVYGRPFM LENGTH: 8 NUMBER OF VALUES: 2

START	END	LABEL (VER. 6.11 15MAR00:16:06:36)
1	1	Group I
2	2	Group II

FORMAT NAME: TRTMTFMT LENGTH: 12 NUMBER OF VALUES: 15

START	END	LABEL (VER. 6.11 28FEB00:15:02:34)
.	.	Missing
10	10	CT
20	20	RT
30	30	Othr, NS
31	31	CT+RT
32	32	Tamoxifen
33	33	RT+Tam
34	34	CT+Tam
35	35	CT+BM
36	36	CT+BM+Tam
37	37	CT+RT+BM
38	38	CT+RT+Tam
39	39	Other
40	40	None
50	50	CT+RT+TAM+BM

FORMAT NAME: USGRPFMT LENGTH: 16 NUMBER OF VALUES: 5

START	END	LABEL (VER. 6.11 15MAR00:16:06:36)
1	1	New Engl/Mid Atl
2	2	North Central
3	3	South Central
4	4	South Atlantic
5	5	Mountain/Pacific

FORMAT NAME: YNFMT LENGTH: 7 NUMBER OF VALUES: 3

START	END	LABEL (VER. 6.11 01DEC99:16:30:00)
.	.	Missing
1	1	Yes
2	2	No

FORMAT NAME: YNUFMT LENGTH: 11 NUMBER OF VALUES: 4

START	END	LABEL (VER. 6.11 01DEC99:16:30:00)
.	.	Missing
1	1	Yes
2	2	No
3	3	Don't know

FORMAT NAME: YPNFMT LENGTH: 10 NUMBER OF VALUES: 4

START	END	LABEL (VER. 6.11 01DEC99:16:30:00)
.	.	Missing
1	1	Yes
2	2	Previously
3	3	No

APPENDIX 5

SOME NOTES ON SURVEY DATA

Some additional information concerning the survey data:

Question 18. Several respondents appeared to have been confused by the answers on the breast-feeding question and added written comments. The following list consists of the survey id number (SID), the marked answer to Q18 (which was coded and is currently the digitized answer), and the patient's comment.

26	Yes, 1	"2 days"
105	No	"rejected"
128	No	"tried but ran into problems"
141	Yes, 1	"1 month"
166	Yes, 1	"only 2 weeks"
171	Yes, 1	"I tried by had inverted nipples"
190	No	"I started to for the 1st one, but had to stop at 6 wks due to milk fever"
245	No	"Try to all"
276	Yes, all	"1st 3-6 months"
277	Yes, 1	"but only for a few weeks"
348	No	"First child for 2 weeks"
357	Yes, all	"For a short time only"
390	Yes, all	"40 days only"
428	Yes, 1	"1 wk for both [2 children] due to hemorrhage 1 wk after delivery"
451	Yes, 1	"But not for long--I bruised my left breast w/ pump"
462	Yes, >1	"A brief while"
485	No	"Attempte w/first" [4 children]
495	Yes, >1	"Just a short time"
505	Yes, >1	"Tried to breast feed"
538	Yes, 1	"For a short time" [only 1 child]

Question 31. There were several write-ins alongside physical activity question. Following list consists of the SID, Marked and coded answer, and the write-in.

153	Never	"Past 3 years"
176	blank	"Chronic pain sapped energy. Prior to MRM, 3 miles walking daily"
237	Never	"Before cancer, physically active"
279		"On diet and physical activity, answered as now-not as I lived before cancer."
292	blank	"5 times a week but not for the last 6 months
315	1-2 times	"not lately, but walking before"
357	blank	"Rarely non-stop"
382	Never	"Since cancer"
386	Never	"Rarely"
425	blank	"Before, 5 days a week"
447	blank	"Seldom"
485	blank	"When on normal schedule, try 5 times a week"
503	3 times	"3-4 times a week when cancer discovered; kept up after surgery; last 2 yrs, no exercise."

Question 40. Several women stated that they grew up in the military.
The SIDs are: 57, 67, 305, 328, 451, 482, 497

Question 43. (patient/sponsor military status).
"Married to Retiree" category includes all widows. Following are SIDs by widow category as answered on the surveys.

Widow: 16, 37, 172, 193, 213, 221, 232, 294, 333, 340, 343, 356, 360, 366, 369, 386, 408, 454, 470, 479, 507

Widow-Retiree: 1, 52, 61, 65, 85, 94, 97, 105, 107, 108, 111, 112, 126, 127, 135, 138, 153, 190, 197, 203, 211, 214, 215, 233, 247, 259, 260, 271, 292, 301*, 307, 325, 350, 352, 361, 365, 372, 373, 390, 423, 428, 451, 456, 461, 463, 464, 480, 481, 503, 510, 522, 541
*Note: Patient did not write "retiree," but did state that her "husband died in 1987" [she would have been age 71].

Widow-Active Duty: 181 ("husband died in 1957"), 206, 220 ("husband died in VietNam 1968"), 223, 375, 519

The "Other" status category coded as "DIV" includes the following:

Divorce: 148

Divorce-Retiree: 49, 51, 229, 348, 435, 517, 528, 537

Divorce-Active Duty: none

Divorce-Husband Deceased: 24

Legally Separated-Retiree: 341

APPENDIX 6

SAS CODE USED IN
DERIVATION OF NEW VARIABLES
AND IN
ADJUSTMENTS OF SOME DATA VALUES

The following statements were used in SAS programs to create new variables and make adjustments to the survey data set. See Appendix 3 for explanatory labels of the variables used below and for an index to the related survey question(s).

```
/* MAKE EXTREME OUTLIER VALUES MISSING OR OTHERWISE ACCT'D FOR*/
  if sid='094' then menop = 1;
  else if sid='105' then daysdx = .;
  else if sid='179' then agemens = .;

/* CHANGE SURG TO YES FOR CONSISTENCY ON ALL BIOPSY REPONSES */
   if type_srg ne . then surg = 1;

/* CONVERT SPECIAL-CODED RESPONSES FOR REL'S W/CA SO ANALYSES CORRECT */
   if sid in ('562','594','640','680','800','878','929')
     then do;
            rel_none = 0;
            if sid = '562'
              then do;  rel_moth = 0; rel_unkn = 1;;  end;
            else
            if sid in ('680','929')
              then do;  rel_m_gm = 0;  rel_grmo = 1;  end;
            else
            if sid in ('594','640','800','878')
              then do;  rel_m_au = 0;  rel_aunt = 1;  end;
         end;
     else do;
            rel_unkn = .; rel_grmo = .; rel_aunt = .;
         end;
/* CHANGE MISSING VALUES OF NEW RELATIVE TYPES TO 0 */
   if rel_grmo = . then rel_grmo = 0;
   if rel_aunt = . then rel_aunt = 0;
   if rel_unkn = . then rel_unkn = 0;

/* ADJUST "WHERE LIVED" DATA TO LONGEST SINGLE TIME PERIOD */
/* SO DURATION CALCULATION IS CORRECT                      */
  if sid in ('110', '151')
      then wh_born = 0;
  else if sid = '175'
      then wh_born = 1;
  else if sid = '033'
     then do; wh_came=0; wh_cage=0; wh_lage=12; end;

/*CHANGE "0" CAME/LEFT WHERE-LIVED AGES TO MISSING FOR CORRECT CALC'S*/
  if wh_came=0 then wh_cage = .;
  if wh_left=0 then wh_lage = .;
```

```
/*CREATE VARIABLE DESIGNATING THE 2 GROUPS OF PATIENT SURVEYS*/
  if sid < '550' then svygrp = 1;
              else svygrp = 2;

/*CALCULATE PATIENT AGE AT DEATH OR WHEN SURVEY GIVEN*/
  select (dead);
    when (1) do;
               agedeath = floor((dod-dob)/365.25);
               agesrvy = .;
             end;
    when (0) do;
               agedeath = .;
               agesrvy = floor(('31dec97'd - dob)/365.25);
             end;
  end;

/*CALCULATE #YRS PATIENT DRANK*/
  select (drink);
    when (1) if ^dead
               then dk_yrs = agesrvy - dk_bage;
               else dk_yrs = agedeath - dk_bage;
    when (2) dk_yrs = dk_eage - dk_bage;
    otherwise;
  end;

/*CALCULATE #YRS PATIENT HAD MENSTRAL CYCLE*/
   if agemens ne .
     then select (menop);
          when (1) mens_yrs = agelast - agemens;
          when (2) if ^dead
                     then mens_yrs = agesrvy - agemens;
                     else mens_yrs = agedeath - agemens;
          otherwise;
        end;

/*CALCULATE #YRS PATIENT TOOK BIRTH CTRL PILLS*/
   if bcntlp=1
     then do;
            select (end_bcp);
              when (1) bcp_yrs = age_ebcp - age_bbcp;
              when (2) if ^dead
                         then bcp_yrs = agesrvy - age_bbcp;
                         else bcp_yrs = agedeath - age_bbcp;
              otherwise;
            end;
          end;

/*CALCULATE # YRS WHERE PATIENT RESIDED LONGEST BEFORE MILITARY*/
   if wh_born=1 then
     do;
       if wh_left=1    then wh_yrs = wh_lage;
       else if dead=1   then wh_yrs = agedeath;
       else wh_yrs = agesrvy;
     end;
```

```
   else if wh_came=1 then
     do;
      if wh_left=1       then wh_yrs = wh_lage - wh_cage;
        else if dead=1  then wh_yrs = agedeath - wh_cage;
        else wh_yrs = agesrvy - wh_cage;
     end;
   else wh_yrs = .;

/* CHANGE 0-VALUED ELAPSED TIMES (RESULT OF CALC'S INVOLVING <1YR) TO 1 YR */
   if dk_yrs=0 then dk_yrs = 1;
   if bcp_yrs=0 then bcp_yrs = 1;
   if mens_yrs=0 then mens_yrs = 1;
   if wh_yrs=0 then wh_yrs = 1;

/* GROUP FILL-IN ANS FOR QUESTION 6 ON HOW DISCOVERED */
   if q6_filin in ('BREAST DISCHARG','BREAST DRAINAGE','LESION W/DRAIN ',
               'NIP INV/FNG MAS','NIP LESION ULCR','NIPPLE BLEEDING',
               'NIPPLE DISCHARG','NIPPLE LESION  ','RASH/FNG MASS  ',
               'ULCR FNG MASS  ','ULCR LESION    ','ULCR MASS      ') then q6_othow = 1;
   else
   if q6_filin in ('BR FULLNESS    ','BR SWOL/ERYTHEM','BREAST FLUSHED ',
               'BRST LOOKED DIF','BRST SWOLLEN   ','DIMPLE ON BRST ',
               'HEMATOMA       ','I FD CHG IN BRS','I FD CYSTS     ',
               'NIPPLE INVERTED','REAPPEAR BRUISE','SKIN PROTRUSION',
               'VISIBLE LUMP   ')                                  then q6_othow = 2;
   else
   if q6_filin in ('BR PAIN/SWOLLEN','BR SORE/SWOLLEN','BREAST PAIN    ',
               'LF SIDE SORE   ','SORENESS       ')                then q6_othow = 3;
   else
   if q6_filin in ('BY NURS HM PERS','FD BY HUSBAND  ','FD BY NP       ',
               'FD @ GYN APPT  ','FD-GI DR IN PHY','LPN FD@GYN EX  ',
               'NP FD THICKNESS')                                  then q6_othow = 4;
   else
   if q6_filin in ('6 WKS AFT INJUR','@ MASTITIS TRMT','@GOITER EVAL   ',
               'BY CT SCAN     ','BY RADIOACT EKG','CERV LYMP ND BX',
               'FD -PSYCHIA REF','FOR OTHER PROBL','ON ADM FOR HEP ',
               'FOR OTHER PROBL','ON ADM FOR HEP ','ON ADM FOR SRG ',
               'PRE TO LUNG SRG','PT FD NECK LUMP','W/CYST FIB DX  ',
               'XMG@BN PAIN ADM')                                  then q6_othow = 5;
   else
   if q6_filin = 'CA NOT DETERMIN'                                 then q6_othow = 6;
   else q6_othow = .;

/* CREATE NEW "HOW FOUND" VARIABLES BASED ON ALL ANSWERS TO QUESTION 6 */
   if q6_rmgm = 1 then nq6_mgm = 1;
   if q6_ifelt = 1 or q6_othow in (1,2,3) or q6_filin = 'FD BY HUSBAND  '
     then nq6_pth = 1;
   if q6_drflt = 1 or (q6_othow = 4 & q6_filin ne 'FD BY HUSBAND  ')
     then nq6_hcp = 1;
   if q6_othow = 5 then nq6_sec = 1;
```

```
/* GROUP BREAST LOCATION BASED ON TYPE_SRG CODES */
   if surg = 1 then          /* yes surgery */
    do;
       if type_srg in (3,6,16) then sv_brloc = 1;          /* rt */
       else if type_srg in (2,7,13,17,18) then sv_brloc = 2;     /* lf */
       else if type_srg in (4,11,12,15,19,20) then sv_brloc = 3;  /* bil */
       else sv_brloc = 9;                                  /* unkn */
     end;
   else if surg = 2 then sv_brloc = .;              /* no surgery */

/* CREATE COUNTS OF MRM, LUM, BX, RECONSTR FOR EA. PT */
   if surg = 1 then
    do;
        mrm = 0; lum = 0; bx = 0; rec = 0;
        if type_srg in (1,2,3,4,8,10,11,12,13,18,19,20) then mrm = 1;
        if type_srg in (5,6,7,10,11,15,19,20) then lum = 1;
        if type_srg in (9,16,17) then bx = 1;
        if type_srg in (8,12,13,18,19) then rec=1;
     end;
   else do;    mrm = .; lum = .; bx = .; rec = .;    end;

/* CREATE MUTUALLY EXCLUSIVE GRPS BASED ON MOST INTENSIVE SRG */
   if type_srg in (1,2,3,4,8,10,11,12,13,18,19,20) then srg_grp = 1;
   else if type_srg in (5,6,7,15) then srg_grp = 2;
   else if type_srg in (9,16,17) then srg_grp = 3;
   else if type_srg ne . then srg_grp = 4;
   else srg_grp = .;

/* CREATE COUNT Variables for CT, RT, TAM, BM, OTH ADDITIONAL TRMTS */
   if addtrtmt ne .  then
    do;
      ct= 0; rt = 0; tam = 0; bm = 0; othtrt = 0;
      if addtrtmt in (10,31,34,35,36,37,38,50) then ct = 1;
      if addtrtmt in (20,31,33,37,38,50) then rt = 1;
      if addtrtmt in (32,33,34,36,38,50) then tam = 1;
      if addtrtmt in (35,36,37,50) then bm = 1;
      if addtrtmt in (30,39) then othtrt = 1;
    end;

/* CREATE RELATIVE GROUPS */
   if rel_none   then rel_grp = 0;
   else if rel_dau or rel_son or rel_moth or rel_sis or rel_bro
       then rel_grp = 1;
   else if rel_m_gm or rel_m_gf or rel_m_au or rel_m_un
       then rel_grp = 2;
   else if rel_p_gm or rel_p_gf or rel_p_au or rel_p_un
       then rel_grp = 3;
   else if rel_aunt or rel_grmo or rel_unkn   then rel_grp = 4;
```

```
/* ALTERNATIVE RELATIVE GROUPS */
   if rel_none then arel_grp = 0;
   else
   if rel_dau or rel_son or rel_moth or rel_sis or rel_bro
     then arel_grp = 1;
   else if rel_m_gm or rel_m_gf or rel_p_gm or rel_p_gf or rel_grmo
     then arel_grp = 2;
   else if rel_m_au or rel_m_un or rel_p_au or rel_p_un or rel_aunt
     then arel_grp = 3;

 /* CALCULATE REL_CT SO MISSING AND NONE ARE SEPARATE CATEGORIES */
   array rel (16) rel_dau rel_son rel_moth rel_sis rel_bro rel_m_gm rel_p_gm
              rel_m_gf rel_p_gf  rel_m_au rel_p_au rel_m_un rel_p_un
              rel_grmo rel_aunt rel_unkn;
   rel_ct = 0;
   do i = 1 to 16;
        if rel(i) = 1  then rel_ct = rel_ct + 1;
   end;
   if rel_none = 0 and rel_ct = 0   then rel_ct = .;

/*CALCULATE BODY MASS USING QUETELET'S INDEX (W/H**2 = KG/M**2) */
   if ht= . or wt= .
     then bmi= .;
     else bmi = round((wt*0.454)/((ht*0.0254)**2),.1);

/ *CREATE SOME SUMMARY CATEGORIES OF WHERE-LIVED-LONGEST*/
  if wh_lived in (1,2)  then wh_usgrp = 1;
  else if wh_lived in (3,4)  then wh_usgrp = 2;
  else if wh_lived in (5,6)  then wh_usgrp = 3;
  else if wh_lived = 7   then wh_usgrp = 4;
  else if wh_lived in (8,9)  then wh_usgrp = 5;
  else  wh_usgrp = .;

 / *CREATE US VS OTHER CATEGORIES FOR WHERE-LIVED*/
  if wh_lived = . then wh_lvgrp = .;
  else  if wh_lived in (1,2,3,4,5,6,7,8,9) then wh_lvgrp = 1;
  else  wh_lvgrp = 2;

 /*CREATE MILITARY RANK GROUPINGS  */
  if milrank in ('E3 ','E4 ')   then milgrp1 = 1;
  else if milrank in ('E5 ','E6 ')   then milgrp1 = 2;
  else if milrank in ('E7 ','E8 ','E9 ','MSG')   then milgrp1 = 3;
  else if milrank in ('W2 ','W3 ','W4 ')   then milgrp1 = 4;
  else if milrank in ('O01','O02','O03')   then milgrp1 = 5;
  else if milrank in ('O04','O05','O06')   then milgrp1 = 6;
  else if milrank in ('O07','O08','O09')   then milgrp1 = 7;
  else milgrp1 = .;

  /*CREATE ENLISTED VS OFFICER GROUPINGS */
  if milrank in ('E3 ','E4 ','E5 ','E6 ','E7 ','E8 ','E9 ','MSG')
      then milgrp2 = 1;
  else  if milrank in ('W2 ','W3 ','W4 ','O01','O02','O03',
                       'O04','O05','O06','O07','O08','O09')
     then milgrp2 = 2;
```

```
  else  milgrp2 = .;

/* COUNT MULTIPLE REPSONSES FOR QUESTIONS ALLOWING MULTI-ANSWERS */
   array q6 (4) q6_rmgm q6_ifelt q6_drflt q6_othr;
   array dly (8) delay_r1-delay_r8;
   array ca (12) ca_colon ca_bladd ca_skin ca_ovary ca_kidne ca_pancr
              ca_lung ca_brain ca_cer_u ca_othrs ca_brst ca_bone;
   array stat (5) s_mar_ad s_mar_rt s_other s_slf_ad s_slf_rt;
   q6_ct=0; dly_ct=0; ca_ct=0; rel_ct=0; stat_ct=0;
   do i=1 to 4;
     if q6(i)=1 then q6_ct=q6_ct+1;
   end;
   do j=1 to 8;
     if dly(j)=1 then dly_ct=dly_ct+1;
   end;
   do k=1 to 12;
     if ca(k)=1 then ca_ct=ca_ct+1;
   end;
   do m=1 to 5;
   if stat(m)=1 then stat_ct = stat_ct+1;
   end;
```

APPENDIX 7

95-PERCENTILE SUBSAMPLE FOR SELECT VARIABLES: ANOVA AND CHI-SQUARE TEST RESULTS

Cancer Confirmation

Q7. "After the cancer was first discovered, how much time passed until tests were done and a doctor said you definitely had cancer?"

Variable	N	#Missing	Med	(Range)*	CV	Mean	SD	Pr>F
Days til DX Conf (n=880)								0.0327
White	436	260	14	(0-217)	130.63	33.53	43.80	
African American	64	56	31	(1-217)	107.88	48.83	52.68	
Hispanic	38	26	19.5	(4-186)	119.10	40.97	48.80	
Total	538	342	17	(0-217)	126.82	35.88	45.50	

*0 days means diagnosis was confirmed on same day as initial discovery.

Children

Q16. " How many children do you have?" (If Q15=Yes).

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
No. Children (n=578)								0.1564
White	409	64	2	(1-4)	37.32	2.39	0.89	
African American	51	10	2	(1-4)	37.52	2.24	0.84	
Hispanic	39	5	2	(1-4)	39.19	2.15	0.84	
Total	499	79	2	(1-4)	37.56	2.36	0.89	

Tobacco Use

Q23. "How many cigarettes do (did) you smoke on an average day?" (If Q21=Yes/Previously).

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
No. Cigarettes/Day (n=304)								0.0025
White	221	30	20	(1-35)	44.82	16.75	7.51	
African American	35	4	10	(1-30)	69.45	13.06	9.07	
Hispanic	11	3	10	(3-20)	57.25	10.82	6.19	
Total	267	37	20	(1-35)	48.87	16.02	7.83	

Alcohol Use

Q26. "How old were you when you started to drink?" (If Q24=Yes/Previously)
Q27. "How old were you when you stopped drinking?" (If Q24=Yes/Previously)
Q26-27 Derived variable, number of years patient drank alcohol (If Q24=Yes/Previously).

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Age Began Drink (n=358)								0.3787
White	149	138	20	(14-38)	20.75	21.16	4.39	
African American	18	35	19.5	(15-33)	22.12	20.78	4.60	
Hispanic	9	9	25	(12-33)	28.05	23.22	6.51	
Total	176	182	20	(12-38)	21.35	21.23	4.53	

Birth Control Pills

Q36-39, Derived variable for number of years took birth control pill.

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
No. Yrs Br Ctrl (n=235)								0.1371
White	167	20	4	(1-17)	82.28	5.23	4.30	
African American	29	6	7	(1-16)	71.64	6.72	4.82	
Hispanic	12	1	6.5	(1-16)	81.66	6.92	5.65	
Total	208	27	4	(1-17)	80.93	5.53	4.48	

*Converted and coded to age prior to data input.

Geographic Region

Q41. "What ages were you when you came to the place you marked in item #40..." (If came=Yes).
Q41. Derived variable for number of years.

Variable	N	#Missing	Med	(Range)	CV	Mean	SD	Pr>F
Age When Came (n=74)								0.0006
White	59	0	7	(1-26)	76.04	8.61	6.55	
African American	8	0	6	(2-22)	89.22	7.13	6.36	
Hispanic	7	0	20	(11-30)	36.67	18.86	6.91	
Total	74	0	7.5	(1-30)	76.20	9.42	7.18	
No. Yrs Where Lived								0.4129
White	569	106	47	(1-79)	49.41	44.25	21.86	
African American	92	27	40	(12-76)	39.30	41.52	16.32	
Hispanic	52	15	48.5	(1-74)	39.16	45.85	17.95	
Total	713	148	45	(1-79)	47.63	44.02	20.97	